PULP & PAPER

FEBRUARY 1957

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...at Celulosa de Chihuahua

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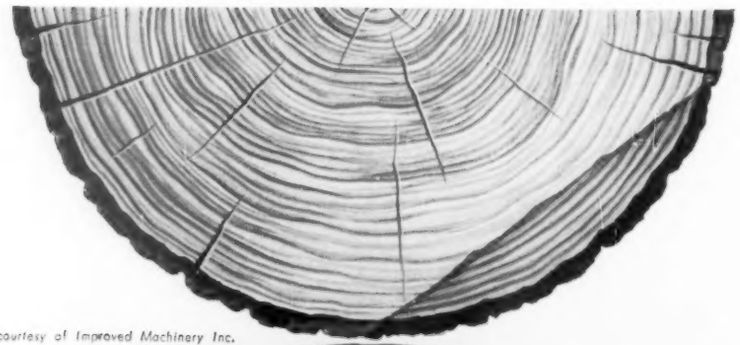

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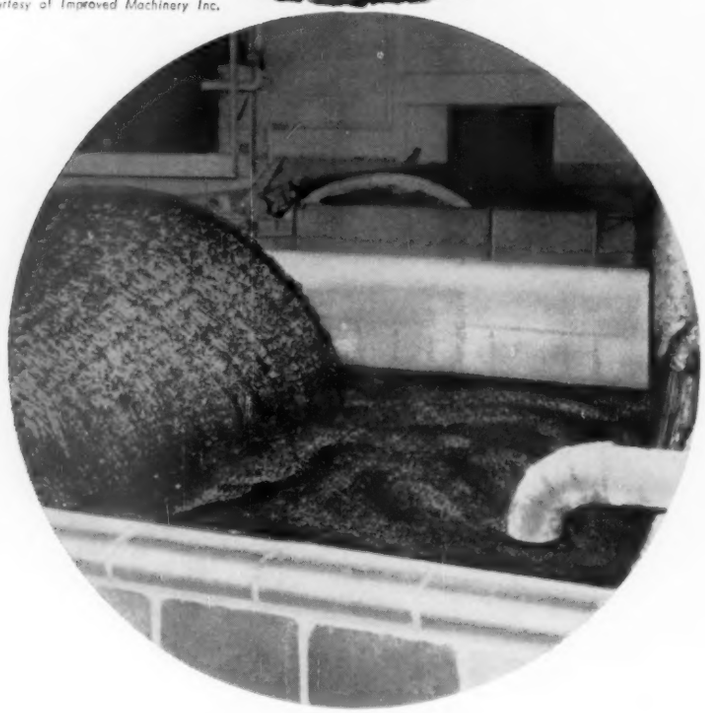

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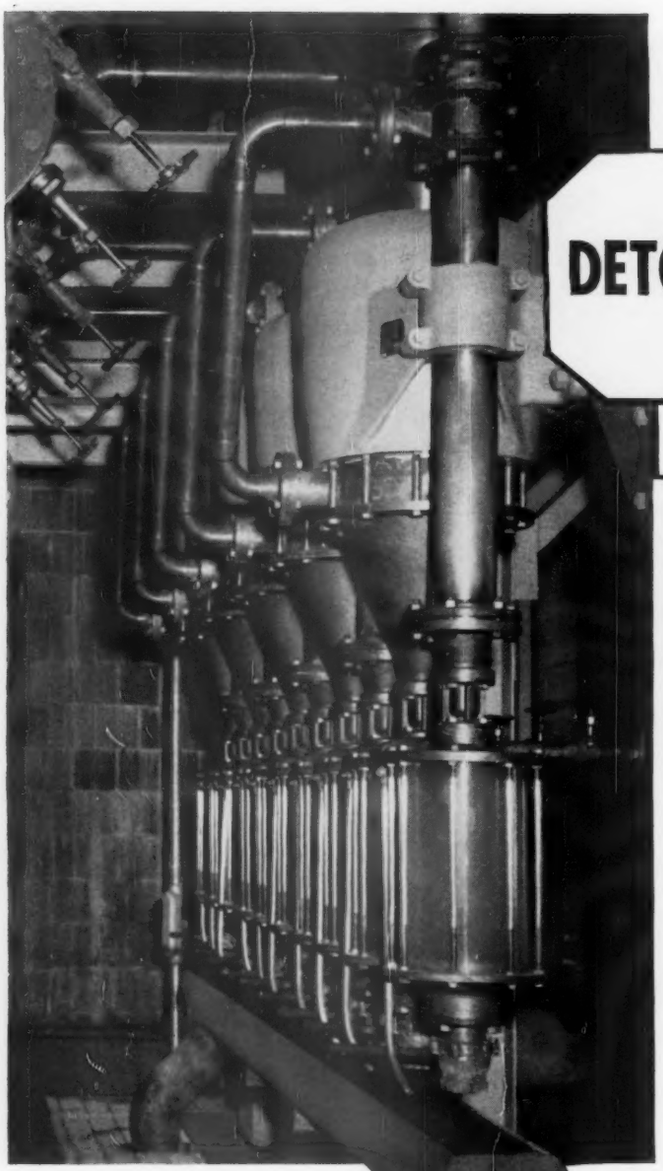

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PULP & PAPER

February 1957

VOLUME 31
NUMBER 2

READER'S GUIDED TOUR

PULP & PAPER's "Preview" of 1957 Paper Week 39

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COVER PICTURE—In foreground is Celulosa de Chihuahua, like a cluster of jewels. Unusual design, use of varied colors in tile and glass, make it a strange looking plant for a pulp mill. In background is new town built for employes.

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SUBSCRIPTION RATE (for 12 monthly issues and WORLD REVIEW NUMBER, each year): United States, Canada, Mexico and other Pan American Union nations—1 yr., $4.00; 2 yrs., $6.00; 3 yrs., $8.00. Others—1 yr., $5.00; 2 yrs., $8.00; 3 yrs., $11.00. Single copy, 50¢ (WORLD REVIEW NUMBER, $1.00 per copy).

CHANGE OF ADDRESS: Send subscription orders and changes of addresses to Subscription Dept., PULP & PAPER, 500 Howard St., San Francisco 5, Calif. Include both old and new addresses, and zone number.

PULP & PAPER is published monthly, except July when publication is semi-monthly, at Bristol, Conn., by Miller Freeman Publications, Incorporated. Entered as second class matter, Dec. 4, 1951, at Post Office, Bristol, Conn., under Act of March 3, 1879.

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The Editor
PULP & PAPER
1791 Howard Street
Chicago 26, Illinois

THE EDITOR READS HIS MAIL

Georgia-Pacific Tells Why It Goes Ahead with Oregon Mill

—Portland, Ore.

Editor: This past year has been marked by unusual activity on the part of professional soothsayers, by an unprecedented amount of new mill and merger announcements and by solemn warnings of impending overproduction—all three sometimes coming from the same source.

We've been asked about that. And because we're putting Toledo aboard what some people consider to be an already overloaded bandwagon, we're glad to tell you what our own little crystal ball shows. (G-P is building a new 250-ton kraft mill at Toledo, Ore.)

As the smoke clears, we see some fundamentals: The first is that the consumption of paper—whether it be newsprint, book paper, sanitary papers, building or packaging materials—pretty directly reflects the standard of living. Paper has often been called "the yardstick of civilization," because it contributes more than any other medium to the advancement of civilization.

Hence, to say that this new capacity is not going to be needed is to say that it exceeds the rate at which we can expect civilization and living standards to advance from here on out . . . not just in this country, but all over the world. If that's true, it doesn't make much difference whether we put our money (and faith) in paper mills or under the mattress.

More smoke: . . . As it clears, we see something we had almost forgotten in the long years of a relatively tight market: That a little surplus capacity is a healthy thing—necessary to sound growth. It provides both incentive and machine-time for exploration and development of new uses and new markets; both neglected when the demand for established uses and old customers exceeds supply.

Our crystal ball clouds up again, but this time the smoke is swirling in the opposite direction! Time is turning backward—to the thirties. That was when we had a real dose of "overproduction."

But the smoke clears to remind us that total U.S. pulp capacity in 1936 was less than one-third of the capacity which left us with a shortage in peace-time 1956 (Kraft pulp capacity in 1936 was less than one-sixth U.S. capacity in 1956).

So we're going ahead with our bit of new capacity at Toledo—confident its production will be needed to support an expanding economy and a rising standard of living throughout the world.

H. S. DANIELS
President
Georgia-Pacific Paper Co.

"Discriminatory Tax" on Loggers

—Washington, D.C.

Editor: The Treasury Department recently published its tentative regulations for administering the $1.50 per 1,000 lbs. annual highway-use tax imposed upon heavy trucks by the Highway Act of 1956, although it became effective July 1.

Because of the great dependence of the forest industries upon trucks we regard highway-use taxes as highly discriminatory when applied to trucks operating over roads that are privately built or maintained. We secured an exemption for logging trucks operating entirely upon private roads and not required to be registered for highway-use under state law but could not prevail upon Congress to broaden this feature by at least allowing a refund on some pro-rated basis to the extent that such trucks are used off tax-built highways.

WILLIAM E. SANDERS
Assistant General Counsel
National Lumber Mfrs. Assn.

Eds. note.—Extra copies of the proposed regulations are available on request from the NLMA, 1319-18th St. N.W., Washington 6, D.C.

Bouquet for Townsend Story

—Port Townsend, Wash.

Editor: Just dropping you a line to let you know we all appreciated the article on the Port Townsend mill in the November issue very much. Our old time mill supervisors, especially, were very appreciative. It was obvious that a great deal of effort was put into the article to describe the significance of new developments at Port Townsend.

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PULP & PAPER NEWS FROM 'ROUND THE WORLD

New Finnish Mill Has Three Paper Machines

Important addition to the productive capacity of Finland's paper industry is represented by the completion of the Kaipola Paper Mills of the United Paper Mills, Ltd. On the Kaipolaniemi peninsula of the great lake of Päijänne, this three-machine mill has a total production of about 125,000 tons a year, 120,000 tons being newsprint.

To insure adequate transport facilities for raw materials and finished products, the railway line was extended to Kaipola and a new road built. Houses and blocks of flats provide for a community of about 3,000.

The mechanical pulp mill is equipped with 12 Roberts Grinders each operated by a 3,200 kw motor. The total capacity is 800 tons of mechanical pulp a day. The mill is also equipped with pulpers in which the mill's daily requirement of chemical pulp is slushed. Mechanical and chemical pulp is pumped to the paper machines.

Paper machine No. 1, trimmed width 270 in., has an annual output of about 70,000 tons of newsprint. It was supplied by Bagley-Sewall division of Black-Clawson Co., Watertown, N.Y.

No. 2, trimmed width 200 in., has an annual production of about 50,000 tons. Built by Walmsleys (Bury) Ltd., the machine has been designed to produce super-calendered papers as well as newsprint and is equipped with a Walmsley supercalender.

No. 3 is principally making wrapping and packing paper for export. An old machine from the company's Simpele mill, it was rebuilt at Kaipola. The machine has a 92 in. trim, and the annual output is about 5,000 tons. Thus, total production of the Kaipola machines is about 125,000 tons a year.

SERVES GRACE EXPANSION IN LATIN AMERICA . . . John Kirby is new assistant director of marketing, paper division, of the Latin American Paper and Chemical Group of W. R. Grace & Co. He previously was publisher of "Vision," a news magazine in Spanish and Portuguese devoted to inter-American affairs. Grace's new Latin American Paper and Chemical Group has begun an extensive expansion in paper and chemicals in Latin America.

NEW MILL FOR PAKISTAN . . . P. R. Sandwell, head of the engineering firm, Sandwell & Co., Vancouver, B. C., announces construction has started on a $20 million newsprint plant for the Pakistan government at the delta of the Ganges River, near Khulna in East Pakistan.

The Pakistan mill will have an annual capacity of 23,000 tons of newsprint and 12,000 tons of mechanical printing paper. It will utilize the Gewa (poplar) tree which grows in the Sunderbans forest of East Pakistan, bordering on the Bay of Bengal.

Two paper machines and related equipment valued at $3 million have been ordered from Wartsila Koncern A/B, Helsinki, Finland. A $600,000 contract for electricity equipment has been awarded to Siemens-Schuckertwerke A/G, Erlangen, West Germany.

Forest surveys and logging plan will be undertaken by T. & H. Engineering of Vancouver.

Sandwell's project engineer in Vancouver is Don Wyness and the firm's resident engineer in Pakistan is Jack Southin.

NEW FIGURES ON NEW ZEALAND . . . Owing to delay in New Zealand, some statistics on its status as a pulp and paper producing area were omitted from the 1956 edition of PULP & PAPER'S World Review Number.

Paper production in New Zealand in 1955, totalling 41,612 tons, included 10,000 tons of newsprint.

Mechanical pulp production totalled 42,500 tons; mechanical pulp 68,762 tons, paperboard 22,652 and fibreboard 23,901 tons.

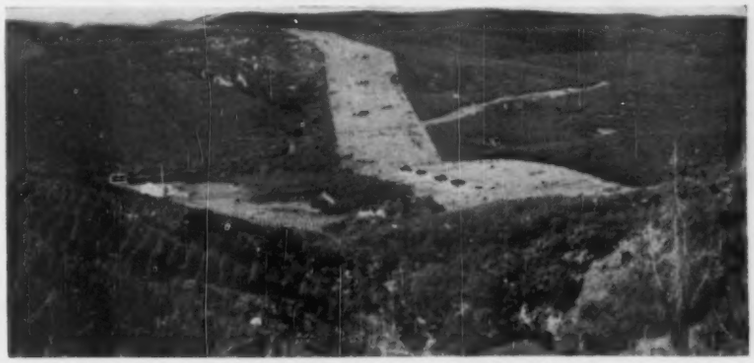
Incidentally, the population of New Zealand was estimated at 2,140,000.

RUSSIA'S SCIENTISTS HAVE TROUBLE FINDING JOBS . . . While a great many scientists and engineers are being trained in the colleges and vocational schools of Russia, and some reports widely publicized were to the effect Russia was turning out more of them than the U.S.A., more recent information reaching educators abroad is that Russia is not able to find enough jobs for them.

It doesn't have enough factories, plants and mills. So this is possibly another case where a Russian program was accelerated to the point where it was far beyond needs and out of balance. No one suggests that Russia has as many industries as the U.S.A., where these scientists can work.

SPAIN'S FUTURE—TO 1967—"*Future Demand for Paper and Paperboard in Spain*" is the title of a 35-page publication from Madrid which projects Spain's pulp and paper outlook to 1967. Present total paper production of around 200,000 tons is expected to increase by 150% while population increases from 28,581,052 to 31,334,680. It contains many tables and charts.

A letter to PULP & PAPER from the author indicates copies may be obtained by writing him: Jose Luis Asenjo, Martinez, Licenciado en Ciencas Economicas, Madrid.



PLANTED PINE FORESTS IN SWAZILAND, SOUTH AFRICA. Bowaters (London) has shown interest in the fast growing pine forests planted in Swaziland by Colonial Development Corp. of London. At left of picture may be seen new "Patulite" chipboard mill making boards by continuous extrusion process developed in Germany.

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PULP & PAPER MONTHLY REPORT of significant news and views

SALES INCREASE FIVE TIMES IN 30 YEARS! . . . Because of large amounts of capital required to generate a dollar of sales in this industry, its ratio of capitalization to sales is relatively low. But since 1926, sales of paper and allied products industries have increased 500%—from $1,610,000,000 to $9,850,000,000, says APPA. In the same period, production tonnage increased only three times. . . .

MORE WILL BE SPENT ON ADVERTISING. . . . And that is good news for pulp and paper. Most advertising agencies in the country report that they have bigger budgets to spend in 1957. A survey conducted by Printers' Ink, for example, showed at least a 10% increase this year. It contacted some 71 companies which advertise nationally; they reported their increased advertising expenditure would be 3% to 50%.

WEYERHAEUSER ENTERS SOUTHERN FIELD. . . . Weyerhaeuser Timber Co. has purchased options on 90,000 acres of reforestation lands in Mississippi and Alabama from Mississippi Pulp & Paper Co. and other local owners. The lands are near Columbus, Miss. Present plans are for reforestation and do not include construction of a pulp and paper mill in the immediate future. Weyerhaeuser expects an intensive rehabilitation program will bring the lands into productivity sufficient to ultimately support new local plant capacity. Consulting forester William R. Sizemore, Tallahassee, Ala., has been retained. Lands include shortleaf and loblolly pine stock. They have all been heavily logged, some repeatedly burned. Mississippi Pulp & Paper Co. represented a group of containerboard manufacturers who had planned to locate in the area. It held more than 60 options on forest lands within 75 miles of Columbus. Weyerhaeuser officials explained that the timber company has exercised options on 50,000 acres, is holding options on 40,000 more, with other acreage under consideration. The Tombigbee River, which runs through the property, carries adequate water to support a pulp mill. Weyerhaeuser retaind industrial consultant Charles H. Carpenter, Little Rock, Ark., who helped build Southland Paper Mills, to counsel in the development.

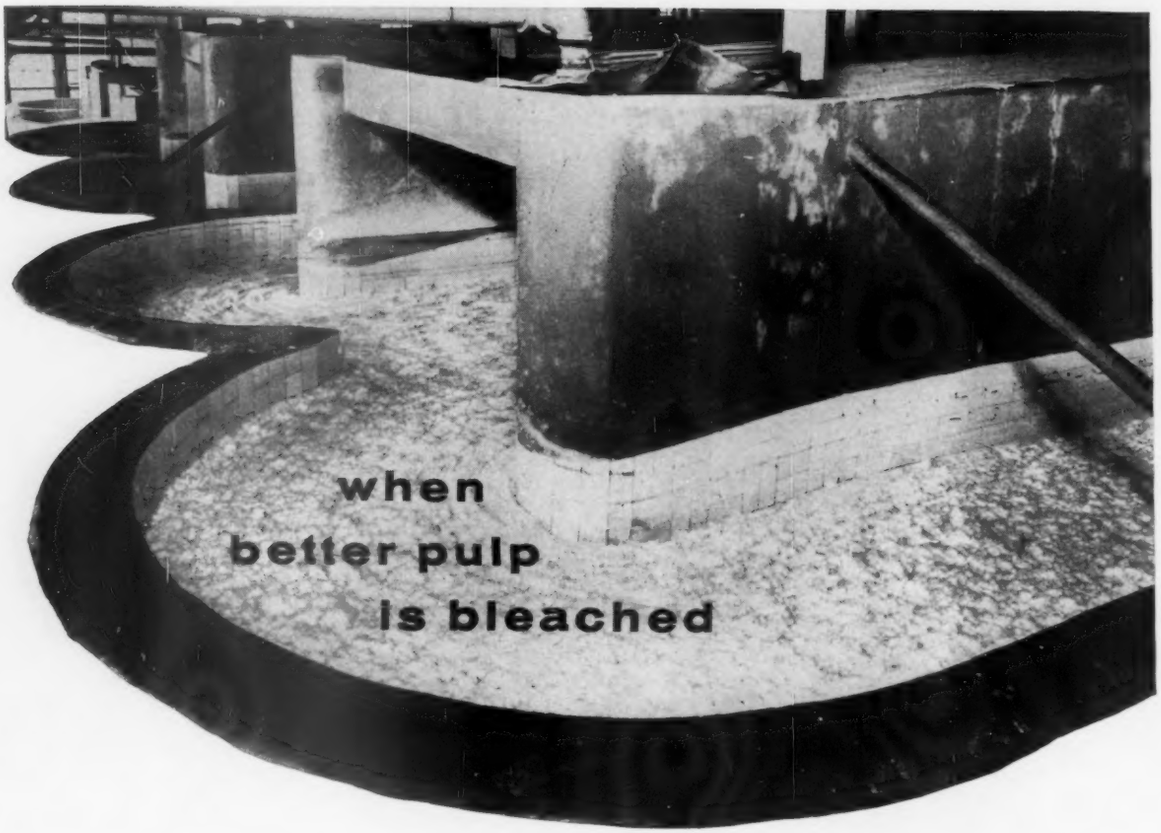
A NEW RECORD YEAR FOR PAPER BOXES. . . . That's what Norman F. Greenway, president of the Folding Paper Box Assn. sees—right on top of a record $900,000,000 volume year in 1956. "Our industry should experience a substantial pickup in orders, sparked by the retail trend to self-selection and new end-uses for beverages, paper goods and cigarets," he said. Cartons are most widely used forms of package—115 billion a year in U.S.A.

COMPETITION FROM METAL CANS. . . . Competitor of paper, metal can production will reach an all-time record of 42 billion units in 1957, compared to 40 billion in 1956, says Pres. Wm. C. Stolk of American Can. The metal can industry has reached new high levels every year for the past five years. Fruit and vegetable cans were up 10%, beer cans up 5%.

PLANS TEMPORARILY SHELVED. . . . Hudson Pulp & Paper Corp. has notified Southern newspaper publishers that it is temporarily shelving plans for construction of a Palatka, Fla., newsprint mill until technological problems can be worked out. William Mazer, president, said, "This does not mean that we are any less determined to get into the newsprint field. However, we feel it only fair to the publishers to let them know we have not been able to get sufficient technological information to clearly indicate that a mill at Palatka would produce quality paper."

ANACONDA FINALLY GETS INTO PULP—INDIRECTLY. . . . After years of studying possibility of using its timber holdings in Montana for pulp as well as lumber, the famed Anaconda mining company's lumber department is setting up a Hansel barker and two chippers at Bonner, Mont., to serve the new Waldorf Paper Products pulp mill being built near Missoula. St. Regis closed its merger deal with J. Neils Lumber Co., clearing the way for a 400-ton St. Regis pulp and paper mill in Montana.

Please turn page for more



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RISING WORLD TRENDS. . . . Overseas Free World requirements for newsprint may reach 5,500,000 tons in 1957, up a half million, while U.S.A. consumption reaches 7,150,000 tons, up 250,000, according to forecasts of the Newsprint Association of Canada. By the end of 1957, U.S. newsprint capacity will reach 1,900,000, up 1,000,000 from 1946. By that time, fringe mills which don't normally make newsprint, probably will resume other grades.

NEW ENGINEERING CENTER FOR FIBREBOARD. . . . Headquarters for the engineering department of Fibreboard Paper Products Corp. has been established at 3669 Mt. Diablo Blvd., in Lafayette, Calif., east of Oakland. R. J. Hallanger is manager. Presently company engineers are working on joint plans with Simpson Timber Co. for a pulp and paperboard mill at Eureka, Calif. A new large corrugating plant is soon to be placed in operation at Antioch, Calif. New gypsum plants at Newark, Calif., and Florence, Colo., were engineered for the Pabco division of the merged Fibreboard firms, and extensive revisions were made to Fibreboard paperboard mills.

CROWN Z AND TIME INC. TO BUILD MILL. . . . First announced in these columns some months ago, Crown Zellerbach's plans for a mill near Baton Rouge, La., have finally definitely taken shape as a partnership with Time Inc. A $31,000,000 mill 27 miles north of Baton Rouge, the St. Francisville (La.) Paper Co., will make 78,000 tons annually of machine-coated printing paper. Half will go to Time-Life magazines; the rest will be sold by CZ. White hardwoods will be used for pulp. Both CZ, at nearby Gaylord mill (Bogalusa), and Time's East Texas Pulp & Paper Co., also nearby, now make pulp for market.

NEW MILLS AT AUGUSTA, GA., AND NEW BERN, S.C. . . . Persistent reports in the area are that a new mill is going to be built by a major American board company at Augusta. Meanwhile, Union Bag-Camp, studying possible construction of a $50 million paper mill near New Bern, S.C., apparently is going ahead with its plans. They have tentative approval from the state stream sanitation committee. Company has option on 4,500 acres.

BOWATERS CONFIRMS FOURTH MACHINE. . . . Plans are approved to add the fourth newsprint machine at Bowaters Southern Paper Corp. at Calhoun, Tenn. It will boost capacity of mill to 400,000 tons a year, is expected to be in operation by January, 1959. New No. 3 Beloit machine will probably be in operation at this issue's presstime.

HERTY FOUNDATION TO BUILD NEW LAB. . . . Herty Foundation in Savannah, Ga., which increased research 600% since 1951 and boosted its staff 400%, will build new 20,000 sq. ft. pilot plant facilities, library, and office. Herty assisted in development of the new food containerboard process at Crossett and the bagasse process of Valentine Pulp & Paper.

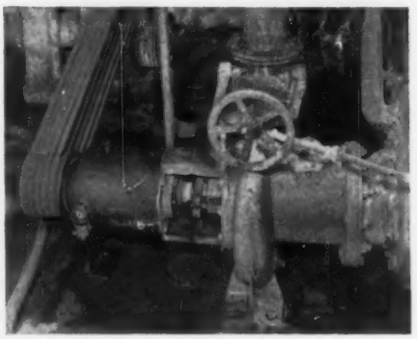
UNION BAG-CAMP EXPANDS AGAIN. . . . A multi-million dollar expansion and modernization program at Savannah will add a 7th Fourdrinier, a 300-ton-a-day hardwood pulp mill, an underwater storage pond for 28,000 cords of pine pulpwood. Most significant: hardwood pulp mill will increase hardwood consumption from 75,000 cords a year to more than 250,000.

COLD SODA HARDWOODS PULPING. . . . This process may be used by two major Southern companies to add to their production, according to U.S. Forest Products Laboratory at Madison, Wis. At least one company in the South is operating a pilot plant. The Madison officials point out that neutral sulfite semi-chemical pulping, developed at Madison, is now used in 35 U.S. mills making board and printing paper from hardwoods. Cold soda processes also are planned in a eucalyptus-using mill 50 miles from Sao Paulo, Brazil, owned by O Estado, Brazil's largest newspaper, and for a mill in Tasmania, Australia, also using eucalyptus.

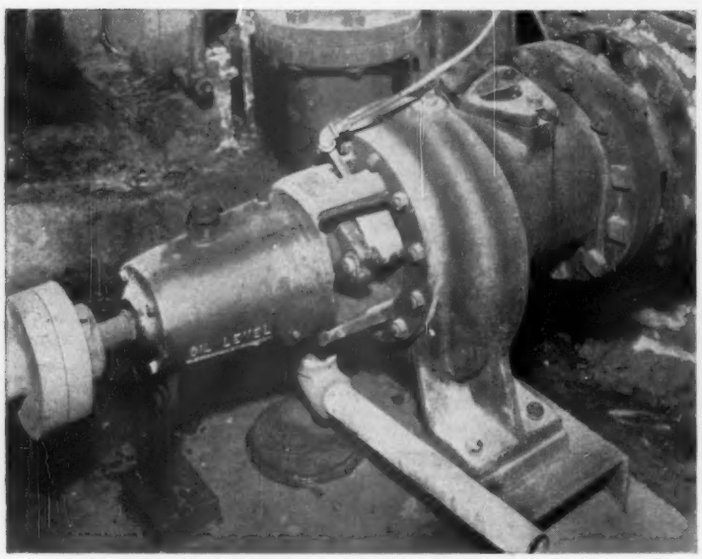
Please turn page for more

TOUGH STOCK-PUMPING JOBS EASILY HANDLED

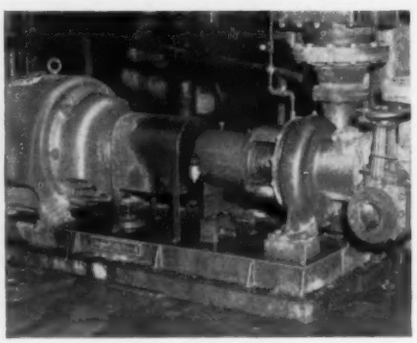
New I-R Diverging-Impeller Pump provides exceptional performance in difficult mill applications



I-R Class 6EH pump, in a large paper company taking suction from deckers and feeding a refiner. The stock pumped has a consistency of 3%, the highest percentage the refiner can accommodate. Pumps previously employed could not handle stock with a consistency above 1 to 2%.



This Class 6EL single-stage, vertically-split Ingersoll-Rand stock pump, installed in a large paper mill handles 5½% bleached and vacuum-type-filter washed soda pulp. Stock, containing air, flows freely and costly shut-downs due to air binding are avoided.



Ingersoll-Rand Class 6EH pump shown is on refiner stand pipe transfer service in a large pulp and paper company. The pump is handling 260 tons per day, 5% stock containing up to 18% air by volume.

In actual mill service, the new Ingersoll-Rand Stock Pump is conclusively proving its ability to handle the toughest job—without air binding or clogging.

Featuring a diverging type impeller and a specially proportioned casing, it will successfully pump liquids containing air, gases or solids. Stock at concentrations as high as 10% can be handled. This means increased stock chest capacities, reduced bleaching costs and substantial savings in the amount of mill water required. Treated, sized or foamy stock can be pumped without air binding or losing prime. Stock chests can be completely emptied without diluting or washing stock.

If you now have a stock-moving problem, it will pay you to look into this new Ingersoll-Rand Stock Pump. Available in capacities from 200 to 7000 gpm and heads up to 225 ft., it offers a practical low-cost solution to your most difficult applications. See your nearest I-R branch office for further details.

Ingersoll-Rand 10-457

11 Broadway, New York 4, N. Y.

PUMPS • CONDENSERS • COMPRESSORS • DIESEL ENGINES • AIR AND ELECTRIC TOOLS • VACUUM EQUIPMENT

MODERNIZATION PLANNED AT MODENA, PA. . . . Since the merger of Modena Paper Co. with Hopper Paper Co., of Taylorville, Ill., plans are going forward to extensively convert and modernize the Modena mill, increasing capacity by 15,000 tons per year. It will make major lines of Hopper's offset and specialty papers.

MULTI-MILLION DOLLAR PROGRAM AT CHARMIN MILLS. . . . Charmin Paper Mills, Inc., merged with Procter & Gamble Co., on the basis of one P&G share for two of Charmin, has not interrupted the program of expansion under way at its Green Bay, Wis., and Cheboygan, Mich. mills. The new digester at Division B in Green Bay was to be completed this month. A new warehouse has been built there. Rebuilding at Cheboygan continues, with demolition of the familiar old top stories of the sulfite building.

PROGRESS IN PLANS FOR NEW SOUTHWEST MILL. . . . Southwest Lumber Mills of McNary and Flagstaff, Ariz., whose plans for a future pulp mill were first revealed in these columns, has asked U.S. Regional Forester Fred Kennedy at Albuquerque, N.M., to offer some 6,000,000 cords pulpwood in northern New Mexico and Arizona for sale. A mill of 200 tons capacity is planned in the Taylor-Snowflake area.

POWELL RIVER MAY BUILD IN MANITOBA. . . . M. J. Foley, president, Powell River Co., tells PULP & PAPER that his company is looking into the possibilities of building a pulp and paper mill in the Moak Lake district of Manitoba, where large-scale hydro-electric installations are planned for International Nickel Co. Site is 400 miles north of Winnipeg. Powell River's relationship to International Nickel would be similar to its agreement with Aluminum Co. of Canada to use power at Kitimat, B.C., for another newsprint mill.

ANOTHER MILL FOR SASKATCHEWAN. . . . A group of Americans headed by Ellis E. Patterson and associates of Studio City, Calif., have obtained an option on 12,000 acres of timber in northwest Saskatchewan as a site for a proposed kraft pulp and paper mill. Engineering surveys are being made in the Meadow Lake forest division adjacent to the acreage held by Robert G. Campbell of Vancouver, B.C., whose plans for a $60,000,000 sulfate mill near Prince Albert were recently announced. Officials of Saskatchewan state that a third group has been making inquiries with a view to building a newsprint mill.

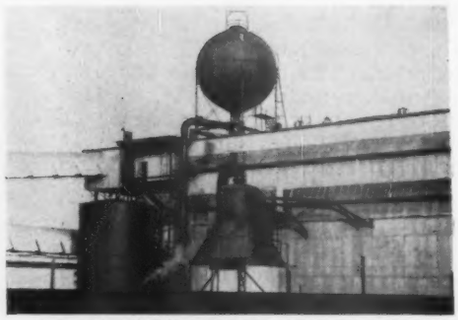
GASPE SITE FOR NEW QUEBEC MILL. . . . A group of businessmen in New Carlisle, Que., has been working on plans for a pulp and paper mill in the Gaspe peninsula, possibly on the north shore of the Baie des Chaleurs. These men claim that there is vital need for such an industry because large quantities of unprocessed wood have been exported to mills in New Brunswick and that this has resulted in much less economic gain to the Quebec area.

ATLANTA PAPER COMPANY TO MERGE WITH MEAD. . . . Atlanta Paper Co. (APACO) will merge with The Mead Corp., marking entrance of Mead in the packaging field. Mead, part-owner of Rome Kraft and Macon Kraft (both within 100-mile radius of Atlanta with a combined daily production of more than 1400 tons), will be able to supply APACO's monthly demand of 10,000 tons of board. Merger is expected to trigger a multi-million dollar expansion by Atlanta Paper, which has two subsidiaries: The Palm Container Corp., Miami, Fla., and Packagemaster, Ltd., Pickering, Ont. The 88-year-old Atlanta firm reputedly makes 70% of all soft-drink carry-home cartons in the U.S. Two years ago it pioneered multi-unit (Cluster-Pak) packaging for canned foods, juices, etc. Mead is currently in the midst of a $1.2 billion expansion program.

ACQUIRES PLANT AT EATON RAPIDS, MICH. . . . River Raisin Paper Co., Monroe, Mich., announces purchase of extensive industrial property at Eaton Rapids, Mich., including two 2-story buildings of Horner Corp. They will be equipped with up-to-date machinery for the production of fiber shipping containers.

For corrosion protection, insulating, weather-proofing . . .

Industry selects ERKOTE® Mastics



Protected with Erkote 2X Corrosion Resisting Mastic

Insulated with Erkote 3X Insulating Mastic

Restored with Erkote White Mica Mastic

Distinguished names in American industry rely on ERKOTE Insulating and Corrosion Resisting Mastics to protect tanks, piping and structures against moisture, vapors and climatic conditions. They have discovered that maintenance costs go down when ERKOTE goes on. These *guaranteed* coatings provide a permanent protective barrier against destructive elements and guard your investment in expensive operating equipment.

Partial list of ERKOTE customers

Allied Chemical & Dye Corp.
American Cyanamid Co.
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Beaunit Mills, Inc.
Bethlehem Steel Corp.
Bowaters Southern Paper Corp.
Bristol-Myers Co.

Cargill Inc.
Continental Can Co.
Crown-Zellerbach Co.

Delaware Power & Light Co.
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DuPont, E.I., de Nemours & Co.

Eastman Kodak Co.
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Gulf Oil Corp.

Hercules Powder Co.

Inland Steel Corp.
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Kraft Foods Co., Inc.

Martin, Glenn L. Co.
Merck & Co., Inc.
Monsanto Chemical Co.

National Lead Co.
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Olin-Mathieson Chemical Corp.
Owens-Illinois Glass Co.

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Rayonier Inc.
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Socony-Mobil Oil Co., Inc.
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United States Steel Corp.

West Virginia Pulp & Paper Co.
Weyerhaeuser Timber Co.
Wyandotte Chemicals Corp.

Complete responsibility for every application

We manufacture our own products, and we furnish our own trained crews and special equipment to apply them. When you select ERKOTE Mastics, you can depend on *one reliable source* for both the quality of the product and the workmanship.

ERKOTE can solve your protection problem

In refineries, in chemical plants, in paper mills . . . in every industry where insulation and corrosion protection are essential, ERKOTE Mastic coatings have a record of proven dependability. If you have a challenging surface protection problem, we will be happy to submit our recommendations.

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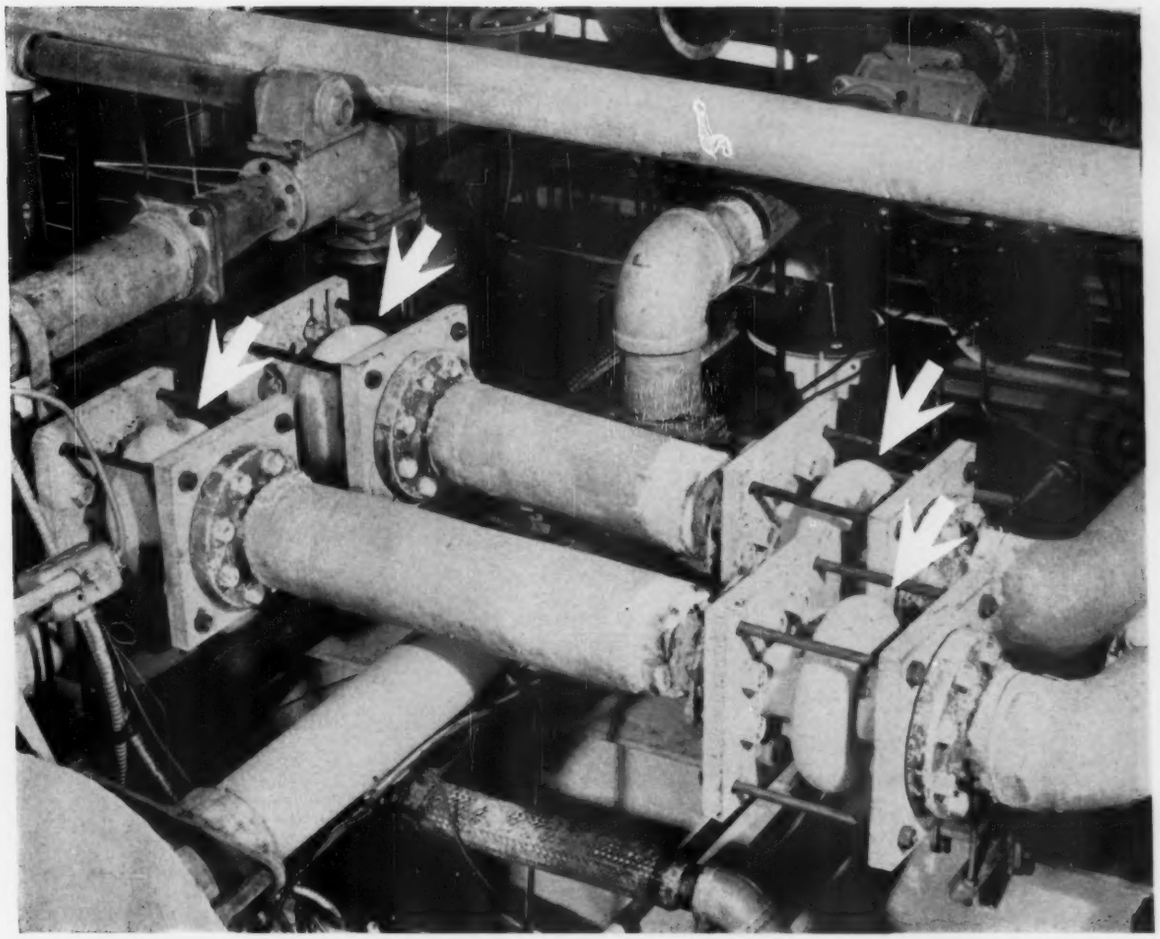
For use where paints fail

EARL PAINT CORPORATION • 240 Genesee Street • Utica, New York

Sales Offices: **Chicago, Pensacola, Philadelphia, Seattle**



"Only *Carpenter* Stainless Tubing gives us failure-proof service"

The manufacturer of these four truly maintenance-free packless expansion joints (shown by arrows, above) has tried other stainless tubing, but says Carpenter Stainless Tubing is the "only one that renders failure-proof service".

These joints absorb thermal expansion, operating at pressures up to 210 psi and temperatures up to 650°F. They are typical of expansion joints made from Carpenter Tubing which operate at pressures up to 10,000 psi or temperatures as high as 1800°F. Once installed, they have never been replaced. Some have been in service over 15 years. The quality and uniformity of Carpenter Stainless Tubing contributed greatly to the trouble-free fabrication and maintenance-free service of these joints.

If an extra measure of quality in stainless tubing and pipe can improve your products or operation, call your Carpenter Distributor. He's your nearby source of better stainless tubing and pipe.

MEMBER

The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

Export Dept.: The Carpenter Steel Co., Port Washington, N.Y.—"CARSTEELCO"

Carpenter

more than corrosion resistance

Stainless Tubing & Pipe

JACK B. RINCKHOFF (right), Chief Engineer, Sulphuric Acid & Phosphates Dept., Chemical Construction Corp., N. Y. City. Left, Michael De Piano, New York Cooper Alloy Representative.

RINCKHOFF OF CHEMICAL CONSTRUCTION

answers 3 questions on Cooper Alloy Valves

Q. Mr. Rinckhoff, in specifying equipment for the H_2SO_4 plants that Chemico constructs around the world, what Cooper Alloy valve models do you buy most of?

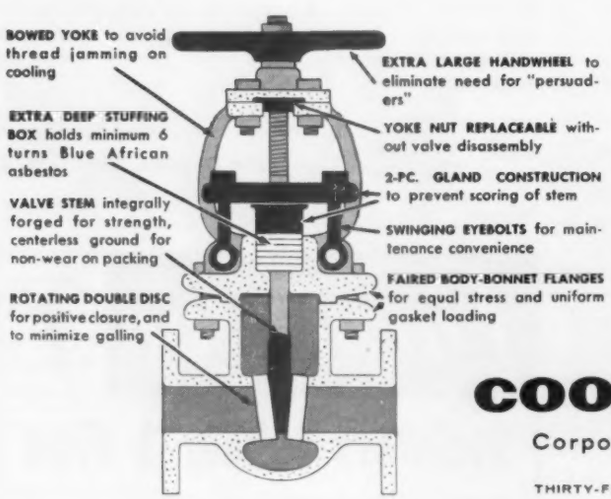
A. Over 80%, I'd say, are OS&Y type gate valves, in sizes 1"to 8"

Q. What's your most important reason for buying Cooper Alloy valves?

A. Availability. Your chain of distributors across the country and in remote parts of the world is of great importance to us. In foreign construction we have often specified Cooper Alloy because of this all-important availability.

Q. What about design and quality?

A. Vital. Valve design determines performance, and our specifications are rigid. As a construction company, we can't afford to jeopardize our reputation by installing questionable equipment. Cooper Alloy valves have passed our tough specs, and have my approval for all severe construction applications.


BOWED YOKE to avoid thread jamming on cooling
EXTRA DEEP STUFFING BOX holds minimum 6 turns Blue African asbestos
VALVE STEM integrally forged for strength, centerless ground for non-wear on packing
ROTATING DOUBLE DISC for positive closure, and to minimize galling
EXTRA LARGE HANDWHEEL to eliminate need for "persuaders"
YOKE NUT REPLACEABLE without valve disassembly
2-PC. GLAND CONSTRUCTION to prevent scoring of stem
SWINGING EYEBOLTS for maintenance convenience
FAIRED BODY-BONNET FLANGES for equal stress and uniform gasket loading

A VALVE DESIGNED FOR STAINLESS!

The Cooper Alloy valve is not an adaptation of earlier brass and iron patterns. Cooper Alloy, with over 35 years of experience in handling stainless steel, created a valve *designed to be cast in stainless!* **Check the Special Design Features shown at left.**

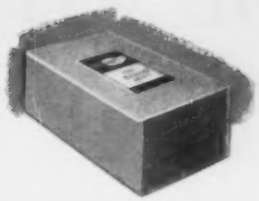
As the little CA man below is saying: *"You can tell a Cooper Alloy Valve as far as you can see it!"* Write today for *your* copy of our folder "Design Factors In Stainless Steel Valves." The Cooper Alloy distributor near you will be glad to show you the complete line of Cooper Alloy valves *and fittings*, and their advantages. He can serve you promptly from local stocks.

COOPER ALLOY

Corporation • Hillside, New Jersey

VALVE & FITTING DIVISION

THIRTY-FIVE YEARS OF STAINLESS STEEL PIONEERING



Buckeye has what it takes

to supply exacting wood pulp needs

It takes modern equipment . . . Buckeye has the latest at their new Foley, Florida mill. It takes a continuing supply of pulpwood . . . Buckeye has a 745,000-acre tree farm plus other sources. It takes unending research . . . Buckeye technical personnel and facilities are unsurpassed in the pulp field. It takes know-how . . . Buckeye experience goes back to 1920 as the first manufacturer of pulp from cotton linters. It takes reliability . . . Buckeye's reputation has been built on continuous and faithful satisfaction of customer needs.

If these qualifications match your requirements for a wood pulp supplier, we'd be glad to have you write or phone us.

BUCKEYE CELLULOSE CORPORATION, Memphis 8, Tenn.

Wood Pulp Plant at Foley, Florida
Cotton Linters Pulp Plant
at Memphis, Tennessee

BUCKEYE PULP

Bleached and Semi-Bleached Kraft
from Southern Pine

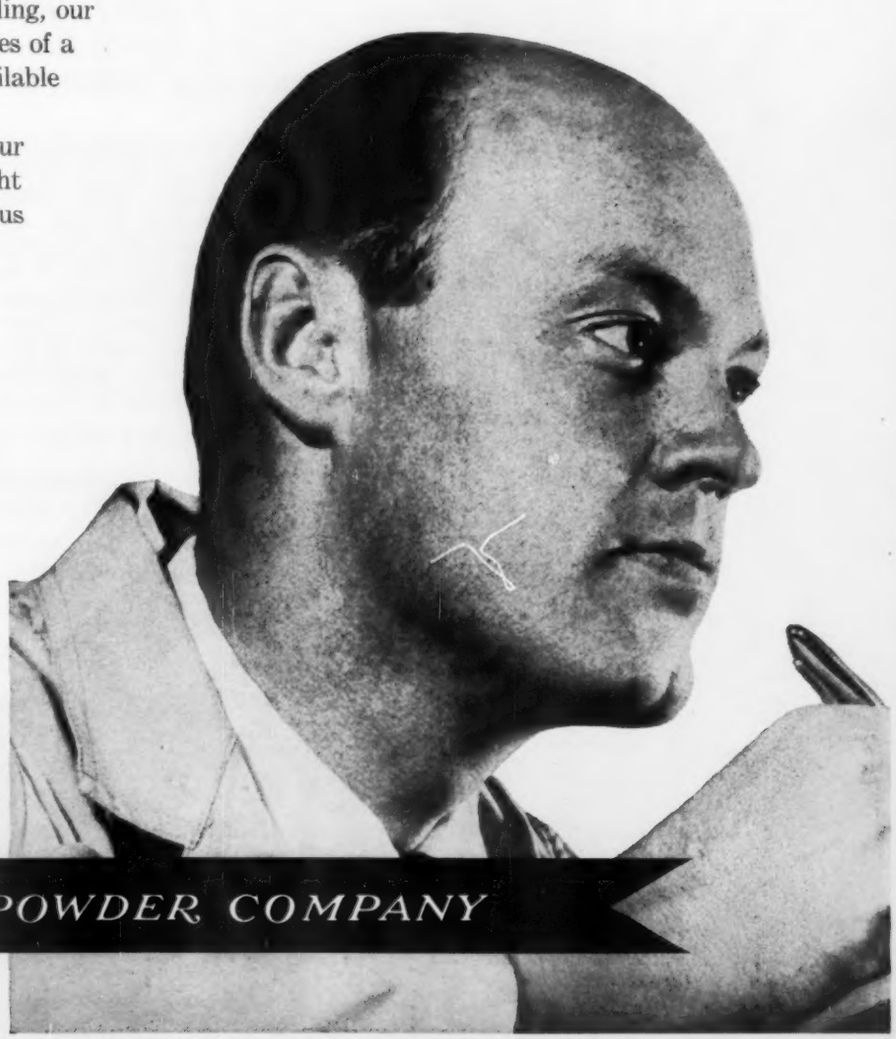
*There must be reasons for leadership**

HERCULES DEFOAMERS ARE MADE WITH YOUR PROBLEMS IN MIND

No matter what your foam problem, there is a Hercules defoamer to solve it.

From the pulp mill through to the paper machine, each Hercules defoamer has been designed to meet some specific requirement. If your needs should call for special products or special handling, our research facilities and the services of a technical representative are available to help you find the answer.

We'll be glad to analyze your foam problems on the spot—right in your mill, using such apparatus as this foam tester, developed exclusively by Hercules. And recently we have designed automatic equipment for preparing defoamer dispersions, to serve you better. Let us work with you in establishing and maintaining foam control.



**Hercules is the acknowledged leader in rosin size and other chemicals for papermaking.*

Paper Makers Chemical Department
965 King Street,
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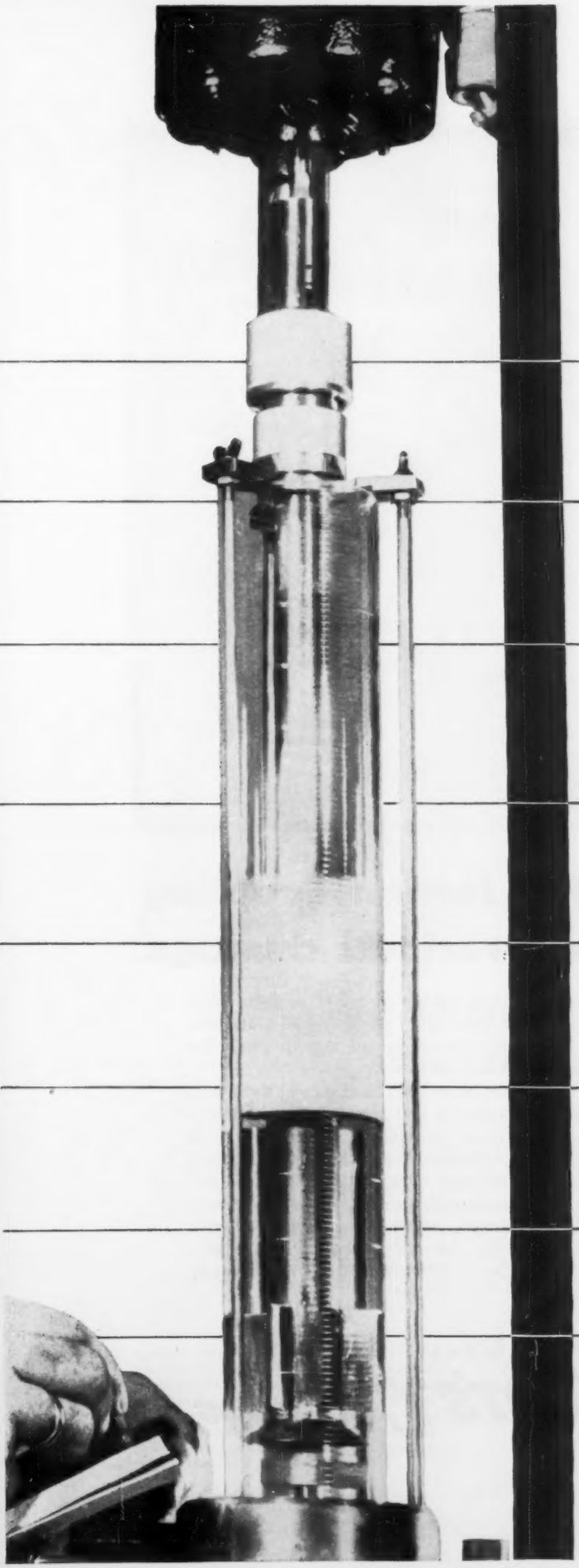
HERCULES POWDER COMPANY



SOME REASONS FOR HERCULES LEADERSHIP

UNEQUALED TECHNICAL SERVICE
A staff of more than 50 technically trained men are thoroughly grounded in the cumulative experience of 40 years' mill and laboratory service to the paper industry. Such company experience results in an understanding of the requirements of the paper industry and is reflected in the variety and dependable quality of the products designed to meet them. One of these men is always as near as your telephone.

FORWARD-LOOKING CHEMICALS
From Hercules research come new products designed to anticipate your needs for improved chemical materials. Whether it is a new grade of size based on rosin or a completely new concept, you can look to Hercules for progressive leadership.

UNMATCHED DISTRIBUTION FACILITIES
Hercules maintains by far the largest number of plants and strategically-located distribution points of any rosin size manufacturer. This is your assurance that the product you want will be delivered when and where you want it.

A SIZE FOR EVERY NEED
Hercules' large number of sizing grades means there is one available to meet practically any requirement. For unusual problems, Hercules can formulate a custom-made grade to fit your specific need. Hercules assures you the lowest possible sizing cost by recommending the right grade for your specific needs.

PACE-SETTING RESEARCH
The most extensive research and technical service facilities devoted exclusively to papermaking are maintained by Hercules. The Hercules laboratories are always at the disposal of customers in helping to solve sizing and other papermaking problems.

HERCULES HELPS MILL OPERATIONS
Hercules has assisted in the industry's progress by designing mechanical improvements and testing equipment. The development and extensive use of the Hercules Automatic Emulsifier, for example, has resulted in major economies in the handling of rosin size.

VARIETY OF PRODUCTS
Hercules is also a leading source of other high-quality papermaking chemicals. Wax emulsions, wet strength resins, defoamers—to name but a few made by Hercules—incorporate the same degree of skilled processing improvements that are found in Hercules'® rosin sizes.

DEPENDABLE SOURCE OF SUPPLY
Hercules' many facilities for producing rosin and rosin size assure you of a thoroughly dependable source of supply.

SAVINGS IN SHIPPING
Hercules has pioneered many improvements in rosin size distribution. The freight and handling savings made possible through the introduction of dry size and higher solids paste size, both in tank truck and tank car shipments, are typical examples.

1. Face plates cap each half-coupling individually.
2. Four breaking-pins shoulder into slots and rigidly connect each half.
3. Necked centers of breaking-pins fracture at predetermined overload pressure.
4. Motor half can continue to rotate indefinitely.
5. New breaking-pins are easily installed.
1
2
3
4
5

New Fast's Breaking-Pin Jordan Coupling eliminates seizure and overload damage

Fast's Breaking-Pin Jordan Coupling reduces your maintenance costs . . . eliminates expensive shutdowns and production stoppages by protecting expensive equipment.

Fast's Breaking-Pin Jordan Coupling protects both motor and Jordan when the plug is inadvertently drawn too tightly, or when hard foreign matter enters the Jordan and jams the knives. Fast's breaking-pins fail only by torsional overload, never through shaft misalignment. By close control of a specially selected breaking-pin material and laboratory analysis, uniform breaking-pin performance is assured. When your Jordan shaft becomes overloaded or knives jam, the pins break at their calibrated center section. After failure, the two halves physically separate. The breaking-pins cannot fly out but are easily removed and replaced.

Koppers engineers will be glad to analyze your coupling problems, and specify a Fast's Breaking-Pin Jordan Coupling to meet your needs. Available in 9 standard sizes for shaft diameters from 2½ through 7 inches. Discover how you can save maintenance time and costs and avoid profit-consuming delays by writing: KOPPERS COMPANY, INC., Metal Products Division, Fast's Coupling Dept., 2702 Scott Street, Baltimore 3, Maryland.

Engineered Products
Sold With *Service*

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THE ORIGINAL
FAST'S Couplings

Newest Solvay plant means lower costs . . . faster service for Southern users

The addition of Brunswick, Ga. as the newest of SOLVAY's strategically located production centers results in quicker deliveries and lower freight rates for Southeastern chlorine and caustic soda users. Liquid caustic soda will be shipped in tank cars and barges, liquid chlorine in single-unit tank cars. Your nearest SOLVAY branch office will give you information on deliveries from this new SOLVAY source.

Aluminum Chloride • Vinyl Chloride • Sodium Nitrite Potassium Carbonate • Calcium Chloride • Caustic Potash Snowflake® Crystals • Sodium Bicarbonate • Soda Ash Ammonium Chloride • Methylene Chloride • Caustic Soda Monochlorobenzene • Ammonium Bicarbonate • Chlorine Carbon Tetrachloride • Methyl Chloride • Chloroform Cleaning Compounds • Para-dichlorobenzene • Hydrogen Peroxide • Ortho-dichlorobenzene

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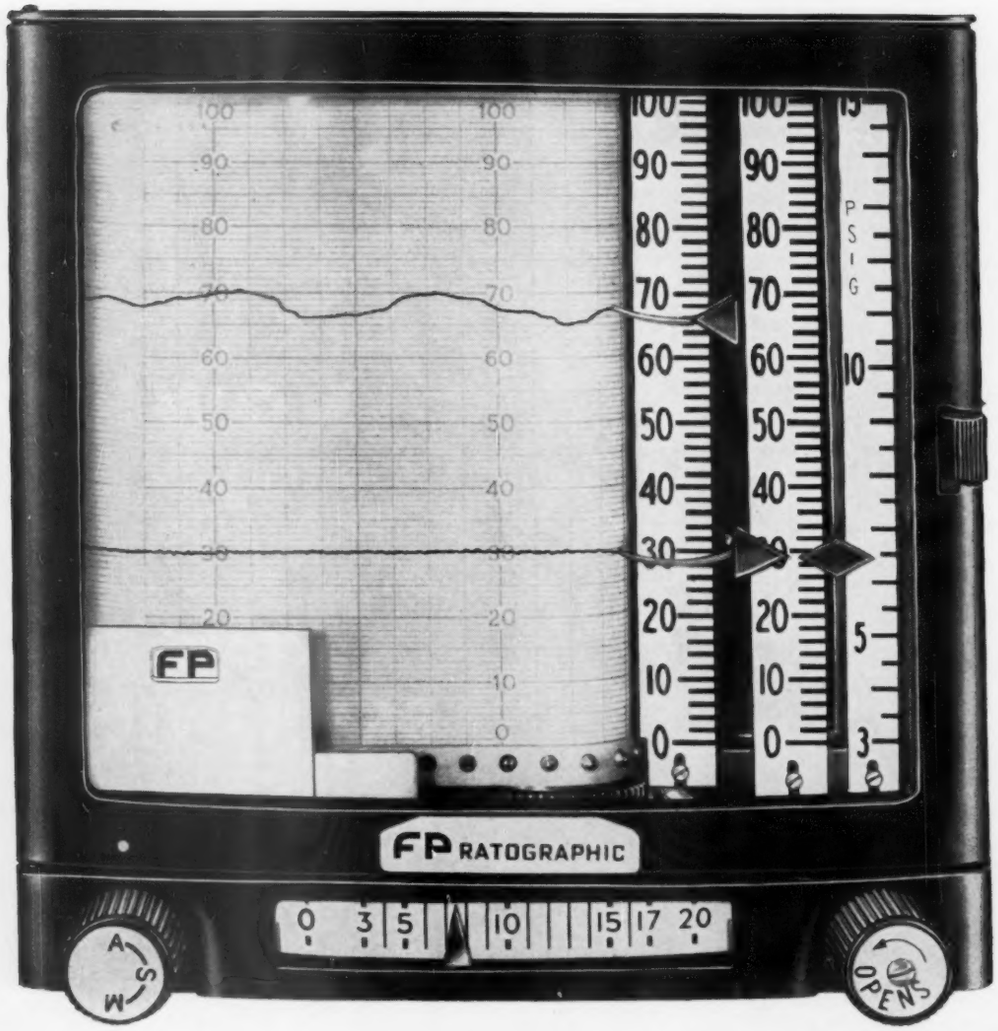


Fischer & Porter has the answer...it's ***READABILITY***

LOOK at the actual size illustration above. Notice how horizontal chart travel assures quick, easy readability. Side writing pens mean accurate reading of chart record. The entire instrument may be withdrawn from case, making visible a 14 hour chart section, *without interrupting operation of the recorder or controller in any way*. There are no other instruments like these using full four inch charts.

F&P Ratographic Recorders may be quickly interchanged from the *front* of the panel. Servicing is simple. Automatic seal-off. Consider the continuous chart rewind with handy daily tear-off. Consider the removable pens, fed from an adequate ink supply reservoir. Yes, consider *all* the F&P Ratographic advantages and you'll buy no others.

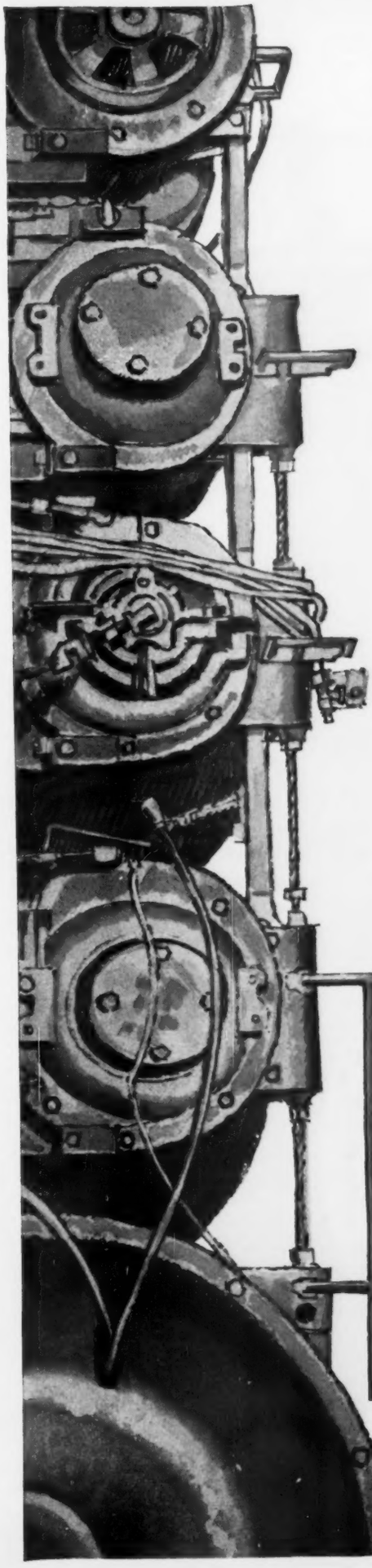
These instruments mount readily on conventional or graphic panels. Specify any of many options and F&P has the answer. A single F&P Ratographic Recorder in use will convince you of their versatility, high accuracy and dependability. That's a firm assurance. Write today for complete information or specific quotations. Fischer & Porter Co., 2127 County Line Road, Hatboro, Penna.

Illustrated Literature on Request

Catalog 55-20 is a complete, detailed report on the multiple applications, the many options available in F&P Ratographic instruments. Write for it today. No obligation, of course.

FP FISCHER & PORTER CO. Hatboro, Pa.

COMPLETE PROCESS INSTRUMENTATION



To the mill executive who decides on lubricants—

Three good reasons for specifying STANOIL Industrial Oil

1 The increased demand for paper products results in machinery being operated at speeds higher than rated capacity. Continuous production has placed greater burdens on lubricating oils. Without the best lubrication, equipment failures may occur. Best idea is to specify STANOIL Industrial Oil.

2 Cost of repairs and replacement of parts added to the loss of production, run many times the cost of lubrication. A small investment in STANOIL Industrial Oil is the best possible protection against bearing failures, repair costs and production loss.

3 STANOIL Industrial Oil can be used in a multitude of applications. Inventories of lubricants can thus be reduced and the danger of lubrication failure due to misapplication can be cut or even eliminated.

Get more facts about STANOIL from your nearby Standard Oil lubrication specialist. There is one near you in any of the 15 Midwest and Rocky Mountain states. Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

Quick Facts About STANOIL Industrial Oil

- **Stability**—STANOIL's antioxidant gives oil resistance to chemical change, minimizes deposits.
- **Rust Prevention**—Inhibitor in STANOIL "plates out" on metal surfaces, prevents corrosion.
- **Cold Starts**—STANOIL has low pour point. Flows freely from cold start. No need for costly warm ups.
- **Resists Effects of Temperature Change**—STANOIL has high viscosity index, is resistant to temperature change. Lubricates in both high and low temperature service.
- **Has Excellent Demulsibility**—STANOIL is refined to eliminate emulsion problems, contains additive to minimize foaming.

STANDARD OIL COMPANY
(Indiana)

STANDARD

THE SUTHERLAND GROUP

SUTHERLAND REFINER CORP., TRENTON, NEW JERSEY
SUTHERLAND INCORPORATED, TRENTON, NEW JERSEY
SUTHERLAND REFINER LTD., MONTREAL, CANADA
SUTHERLAND INTERNATIONAL LTD., NASSAU, BAHAMAS

Sutherland leadership offers integrated systems for increased efficiency, lower operating cost, reduced power requirements.

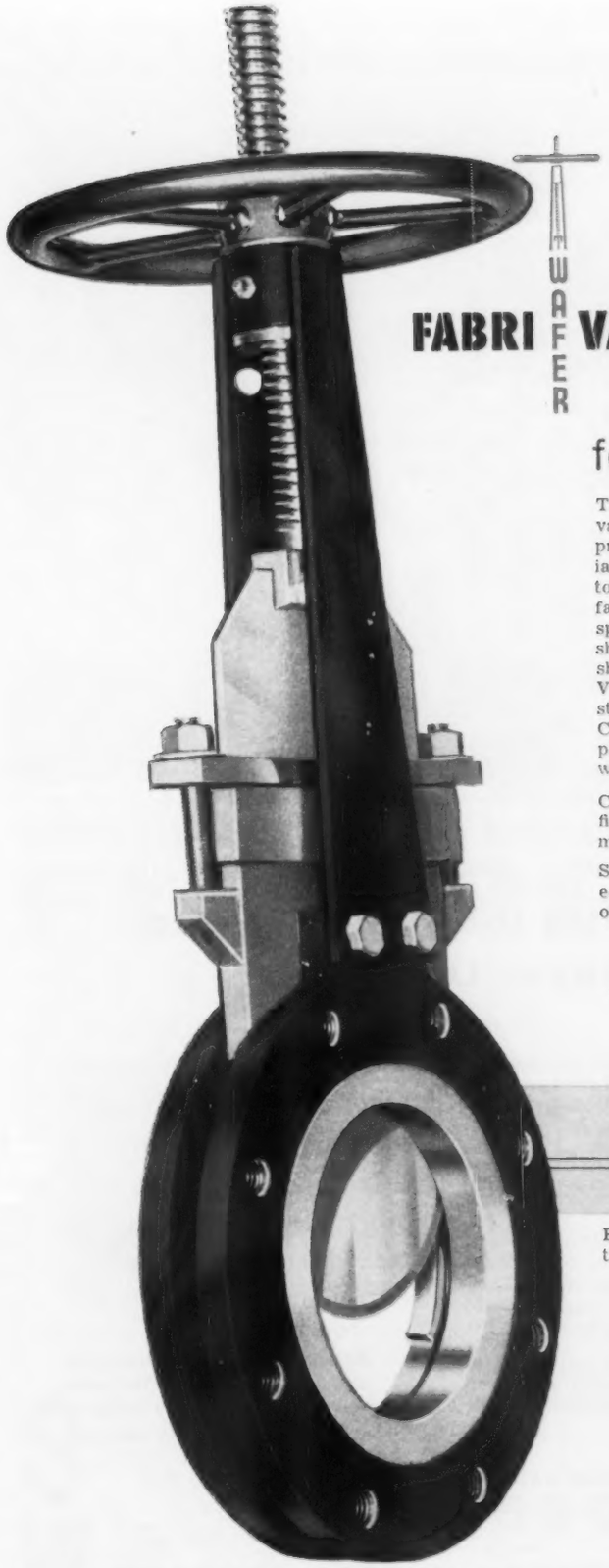
SIMULTANEOUS BEATING AND REFINING replaces the use of beaters for beating and conicals for refining. This simultaneous system has been in use for twenty years on all kinds of pulp and board and paper including white papers made of various furnishes.

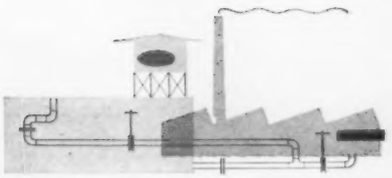
PRESSURE WASHING SYSTEM squeezes the liquor from the fibers and in doing so twists the fibers, thus increasing the felting power of the pulp and, therefore, the strength of boards and papers made from the same. The recovery of salt cake is excellent and the system has distinct advantages over other methods of washing. Another advantage lies in controlled water consumption and consequently effluent to the stream. In some cases pollution of the stream, into which the final discharge is made, is lowered so that the stream B.O.D. can pass State authority.

CONTINUOUS DEFIBERING SYSTEM for broke, cooked chips, waste paper cooked hard or soft, wood, or straw. The Sutherland Breaker Trap is the only equipment designed specifically to separate bundles of fibers. The Breaker Trap removes tramp metal and so protects both itself and subsequent equipment. It leaves intact other waste materials like cellophane, dirt particles, polyethylene, foil, rubber bands, wood slivers, etc., so that they may be removed by standard screening methods. The Sutherland Breaker Trap offers increased yield of usable fibers, decreases screen loss, improves washing efficiency, reduces power needs.

SUTHERLAND HIGH YIELD PROCESS increases the yield of acceptable pulp by 20%, thus effecting a tremendous saving in wood, while at the same time maintaining quality standards. This system is now employed by four major mills and has been operating successfully for over five years.

Further information is available upon request.





WAFER

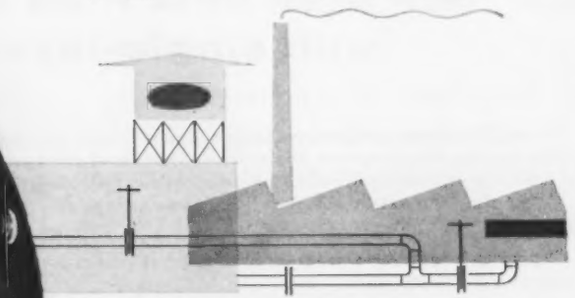
FABRI VALVE

A New Dimension for Modern Industry

The Fabri-Wafer-Valve is a new idea in valve design that answers many difficult production problems, and is already a familiar sight in pulp and paper plants from coast to coast. This new valve allows minimum face-to-face dimensions, permits the use of special metals as required, gives positive shut-off, is light weight and economical to ship, install and maintain. Fabri-Wafer-Valves are available in all sizes from 2" in stainless, monel, nickel or any combination. Contact your nearest distributor for complete details on the many applications of wafer valves — they can save you money.

CUSTOM-MADE to meet new plant specifications and existing plant replacement or modernization.

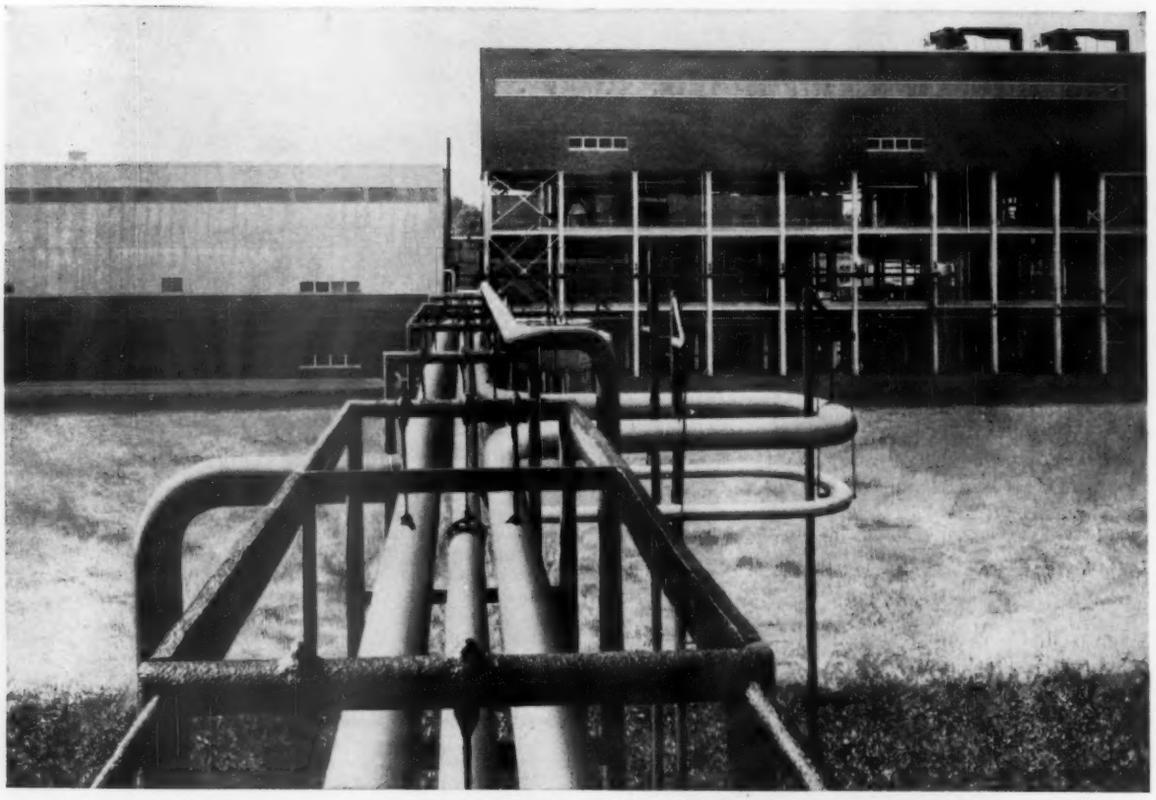
STANDARD wafer valves kept in stock for economical replacement without costly loss of time.



Fabri-Valve Co. of America manufactures the world's largest variety of stock valves.

TRADE MARK
FABRI-VALVE
COMPANY OF AMERICA
2100 N. Albina [illegible] Portland 12, Oregon

FABRI-VALVE DISTRIBUTORS: CORDES BROTHERS, Wilmington, Calif. • CORDES BROTHERS, San Francisco, Calif. • FELKER BROTHERS, Marshfield, Wis. • LEWISTON PLMBG. & HTG., Lewiston, Idaho • THOS. W. MACKAY & SON, LTD., Vancouver, B. C. • DOUGLAS ROBBINS & CO., Minooka, Ill. • SOUTHERN CORP., Charleston, S. C.



Unibestos insulates vital lines carrying steam, condensate and black liquor across the field to the new Crossett mill. J. E. Sirrine Co. of Greenville, S. C., designed the new mill.

Crossett cuts pipe insulation costs with single-layer Unibestos

Steam, hot water, condensate, black liquor—these are the lines that require full protection against heat loss. More and more mills like Crossett find Unibestos seals in more heat all along the line —including the hard-to-insulate joints and fittings.

Made with the strong, interlacing fibers of Amosite asbestos, Unibestos provides better than double-layer protection with just *single-layer construction.*

And it's single-layer application that cuts installation costs by a wide margin. For an insulation so easy to cut and so simple to apply, Unibestos has remarkable, long-lasting strength. Wherever used, Unibestos shrinks less... resists more moisture, acid and chemical fumes... withstands more shock and vibration.

Positive protection...unmatched durability. It's the Unibestos combination for today's most efficient and economical pipe insulation. Unibestos® is available in sectional form through 44" O.D.

Joe Besto says:

No shrinkage up to 750°F! Negligible shrinkage beyond that. Unibestos keeps heat in...doesn't shrink to expose the pipe to a BIG heat loss.

Write for the new 40-page Unibestos catalog

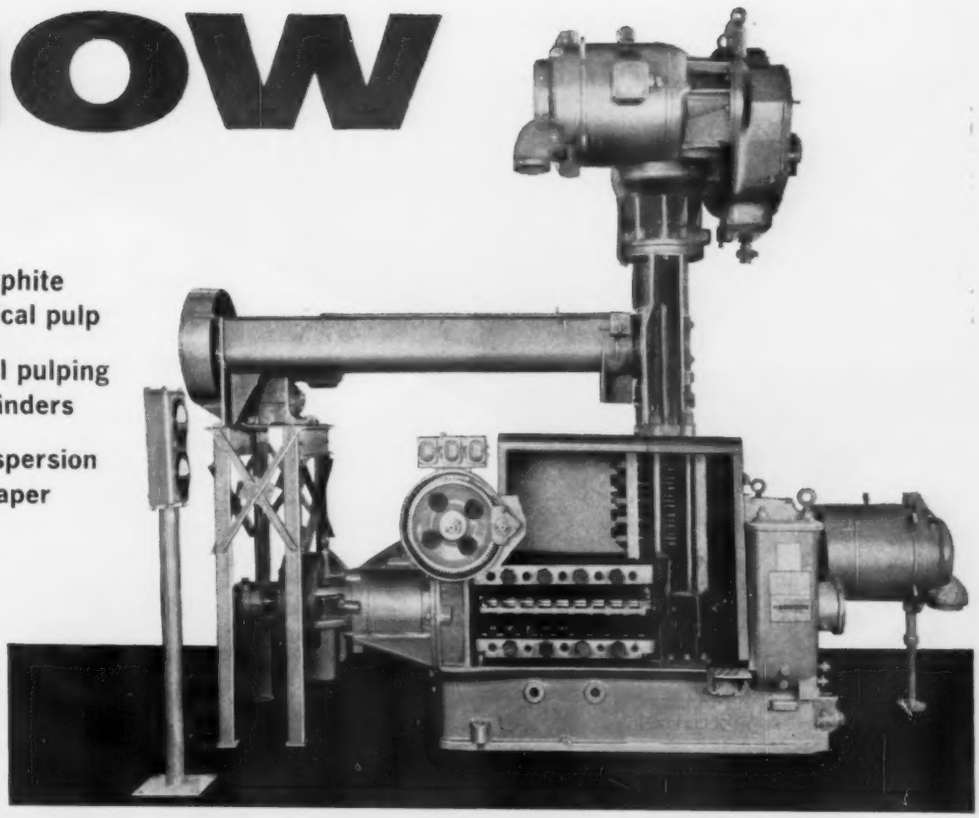
UNARCO

UNION ASBESTOS & RUBBER COMPANY

1111 West Perry Street • Bloomington, Illinois

now

- ▶ neutral sulphite semichemical pulp
- ▶ mechanical pulping without grinders
- ▶ asphalt dispersion in waste paper



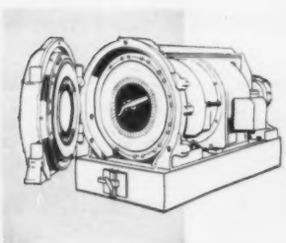
SPROUT-WALDRON – ANDERSON
FIBERPRESS

The FiberPress is a screw press of very heavy construction. It has two important functions: black liquor removal and fiberizing action. Both are very important in semichemical mill operation. At least 8 FiberPresses will be in operation in these applications in U. S. and foreign mills in 1957.

The FiberPress, followed by the SW refiner, forms a mechanical pulping system that produces superior quality mechanical or chemimechanical pulp from chipped or hogged conifers and hard woods.

For lighter applications: the SW-Anderson Moisture Expeller.

SW



For careful analysis and specific recommendations, send your pulping problems to Sprout-Waldron. Address: Sprout-Waldron & Co., Inc., 32 Logan Street, Muncy, Pa., U.S.A.

SPROUT-WALDRON

MODERN PULP PRODUCTION EQUIPMENT

PP/412

AT MANY WELL KNOWN MILLS

Venturi Evaporator-Scrubbers

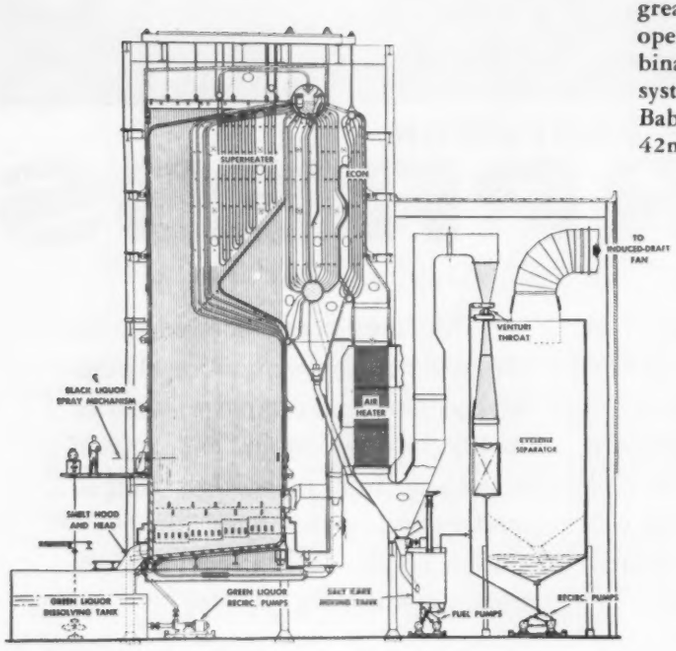
IN B&W RECOVERY SYSTEMS

assure greater operating efficiency

A notable advance in black-liquor recovery is illustrated by the B&W System shown, which features the Venturi Evaporator-Scrubber, and is typical of installations in operation at the Thilmany, D. M. Bare, Western Kraft, Potlatch Forests, Southern Kraft and other pulp and paper plants.

The B&W Venturi Evaporator-Scrubber combines in one unit the concentration of black-liquor with the collection of salt cake fume. Its complete dependability and unusually high efficiency have been thoroughly tested in service for more than three years.

Companies have chosen B&W Recovery Units, equipped with Venturi Evaporator-Scrubbers, for greater efficiency in their black-liquor recovery operations. Whether your mill requires this combination or another, B&W can provide the recovery system that *best* meets your requirements. The Babcock & Wilcox Co., Boiler Division, 161 East 42nd Street, New York 17, N. Y.



VENTURI EVAPORATOR - SCRUBBER LICENSED FROM PEASE, ANTHONY EQUIPMENT CO.

VENTURI-EQUIPPED B&W Recovery Units (in operation and on order)

Thilmany Pulp & Paper	Northwest Paper
D. M. Bare Paper	Mead Corp. (Lynchburg)
Western Kraft	Gulf States Paper
Potlatch Forests	National Container
Watervliet Paper	Buckeye Cellulose

Southern Kraft Division
International Paper Co.—4 Plants

ADVANTAGES of the B&W Venturi Evaporator-Scrubber

- Simple to operate
- Low in First Cost
- Increases Overall Thermal Efficiency
- Reduces Maintenance Requirements
- Continuous, High, Fume Collection Efficiency
- Minimum Space Requirement
- Reduces Multiple-Effect Evaporator Load

BABCOCK & WILCOX
BOILER DIVISION

P-795

Values You Can't Specify

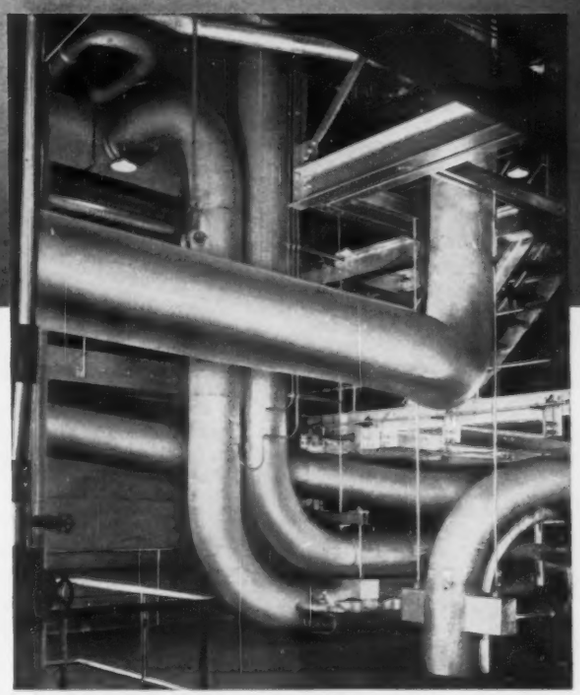
You Get Them in MIDWEST PIPING

In the fabrication and erection of every high pressure and/or high temperature piping installation, there are intangibles important to the success of the job . . . things that cannot be spelled out in the specifications but are essential to getting superior piping at an economical price.

Important among these is the experience of the fabricating and construction organization . . . experience on all kinds of projects so that the possibilities and limitations of all piping materials are well understood. Midwest has fabricated and erected the piping on many critical jobs . . . including numerous atomic energy projects and Kyger Creek (the largest steam power plant ever handled completely by one piping contractor).

Another is a questioning attitude . . . a frame of mind that habitually asks (before the job is placed in the shop for fabrication): "Have the pre-fabricated sub-assemblies been so planned that the field work is minimized and simplified as much as possible?" Highly skilled Midwest piping engineers carefully analyze every job with this question in mind.

For power plant or process, the customer gets the most for his money when he buys Midwest Piping.



Main steam piping at Kyger Creek Plant which has a capacity of 1,075,000 kw and is the largest power plant piping contract (combining fabrication and erection) ever performed by a single contractor.

MIDWEST PIPING COMPANY, INC.

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MIDWEST PIPING SERVICE IS NATIONWIDE

MIDWEST PIPING FABRICATION AND CONSTRUCTION

Offer you many advantages

Unit Operations

provide diverse application in pulp and paper mill process and effluent water treatment

Regardless of whether treatment is motivated by a need for product recovery, water reclamation or pollution abatement, investigation of Dorr-Oliver unit operations can point the way to the *proper* solution of these problems.

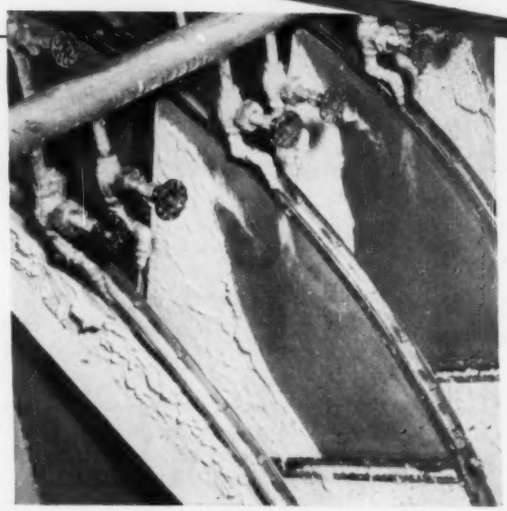
The following is but a brief outline of the complete Dorr-Oliver equipment line for treatment of solids in water. Inherent in their design is the concept of versatility and economy necessary to meet the demands of pulp and paper manufacturers.

FILTRATION

Vacuum Savealls — Available both in drum type and disc type units.

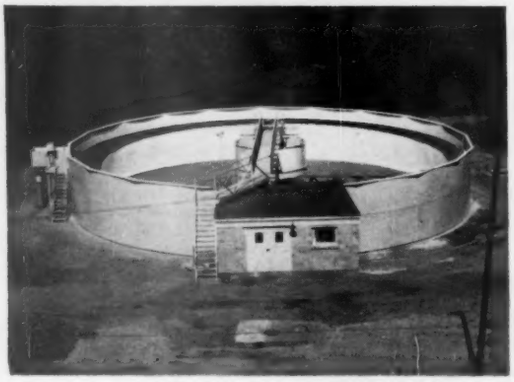
The American* Saveall... ideal where large filtering area is required. Disc type design requires a minimum of floor space and provides a wide range in capacity.

The Oliver Saveall is a drum type vacuum filter designed to meet practically any mill condition. This unit can handle wet broke along with white water without a separate system. Write for bulletin No. 701-R.



American Disc Type Saveall installed at a northeastern mill. Clearly shown are sluicing jets peeling and slicing off cake.

SEDIMENTATION

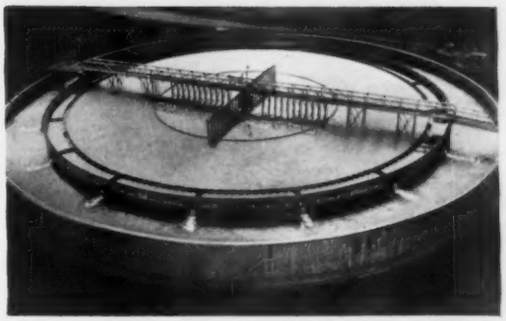


Clarifiers and Thickeners — Dorr-Oliver manufactures a complete line of sedimentation equipment to provide primary treatment (suspended solids removal and BOD reduction) to general mill effluents, drinking, waste water, etc. Suited principally for use as a primary treatment unit the use of the Dorr Clarifier is a sound starting point for eventual complete biological treatment as well.

Equally adaptable to either steel or wooden tanks and earthen basins, the basic types of the Dorr Clarifier are described in Bulletin No. 6192.

Installed at a mid-western paper mill this 90′ diameter Type S Dorr Thickener provides clarification of 4300 GPM of de-inking wastes containing approximately 0.3% solids.

CHEMICAL COAGULATION



The Dorrco Clariflocculator* — A combination unit which carries out unit operations of flocculation and clarification in a single tank. High suspended solids removal is possible due to transference of newly formed flocs from flocculation compartment to clarification compartment without disintegration and the even distribution and rapid settling in clarification section. Recently published Bulletin No. 6801 gives complete information.

Treating raw river water, this Dorrco Clariflocculator Unit installed at a west coast pulp mill supplies 14 MGD of clear process water.

MATERIALS HANDLING

PUMPING, SCREENING, MIXING

The Oliver Diaphragm Slurry Pump . . . air actuated, provides even transmittal of force to diaphragm resulting in maximum life. For removal of sludge from Clarifiers and Clariflocculator Units. Bulletin No. 5000 just off the press outlines this unit along with the complete line of Dorr-Oliver Pumps.

The Dorrco Bar Screen . . . mechanically operated automatically activated unit for removal of large solids from waste flows. Bulletin No. 6400.

The Dorrco Flash Mixer . . . a high speed motor-driven mixing unit. Provides complete, rapid diffusion of chemicals and raw water to avoid floc formation in mixing chamber proper. Bulletin No. 6971.

Oliver Diaphragm Slurry Pump, No. 2 size.

BIOLOGICAL TREATMENT

Activated sludge process as employed to make an 80-90% B.O.D. reduction in mill effluent at a large southern paper mill. Major equipment includes a Dorr Thickener and two Currie Claraetors.

There's no "cure-all" for this type of treatment . . . but the Dorr-Oliver store of diversified equipment and experience adds up to the *correct* kind of solution.

Dorr-Oliver biological processing equipment available includes . . . The Dorrco Distributor for Trickling Filtration . . . a self-propelled unit, equally applicable to low or high-rate treatment for oxidizing organic matter in solutions. Bulletin No. 6300 describes the combinations of various components available in this unit.

The Dorr Clarifier . . . previously described provides continuous removal of settled solids from clarified raw water.

Bulletin No. 6581 outlines the **Currie Claraetor*** . . . a combination unit providing clarification and aeration in a single tank. A compact economical arrangement for carrying out the activated sludge process.

*T.M. Reg. U. S. Pat. Off.

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WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
STAMFORD • CONNECTICUT • U.S.A.

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NEW! Valuable Information on Sulfuric Acid in this big, fact-packed data book...

36 pages of helpful technical data —including material not available elsewhere!

Here—from America's foremost producer of Sulfuric Acid—is one of the most helpful technical bulletins ever offered on this vital basic chemical. It provides a wealth of carefully selected data which years of consumer contact have proved to be most useful and most frequently required.

In addition to interesting background information, this fact-packed bulletin covers such pertinent topics as physical properties . . . storage and handling methods and equipment . . . methods of analysis, etc. Included are many tables, charts and graphs on Sulfuric Acid and Oleum, some of which are not available elsewhere.

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No user of sulfuric should be without this valuable technical bulletin! We will be glad to send you a free copy. Use company letterhead, please, when you request it.

Basic Chemicals for American Industry

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Scenes shown here are from the new Albany Felt color-sound slide film "Felt Applications," available for showing to paper mill personnel.

Worker checks felt length during fulling (or felting) process. From raw wool to shipping, the progress of your Albany felt is checked and double-checked every few minutes to insure uniformity and quality. Below: porosity testing.

PAPER MILL SURVEY SHOWS:

Most superintendents place water removal FIRST!

A few months ago, a survey of paper mill superintendents was made to find out their prime requirements of paper machine felts. Among the answers were: drainage, life, finish, trouble-free operation and many others, but *water removal was first!*

For many years, Albany's outstanding research-design-manufacturing team has worked to improve water removal qualities of felts through new weaves, chemical treatments and other methods . . . while maintaining the delicate balance of long life and desired finish. Significantly, superintendents today are running more Albany felts on their machines than any other kind, and the reason for their choice can be summed up in a word — *performance!*

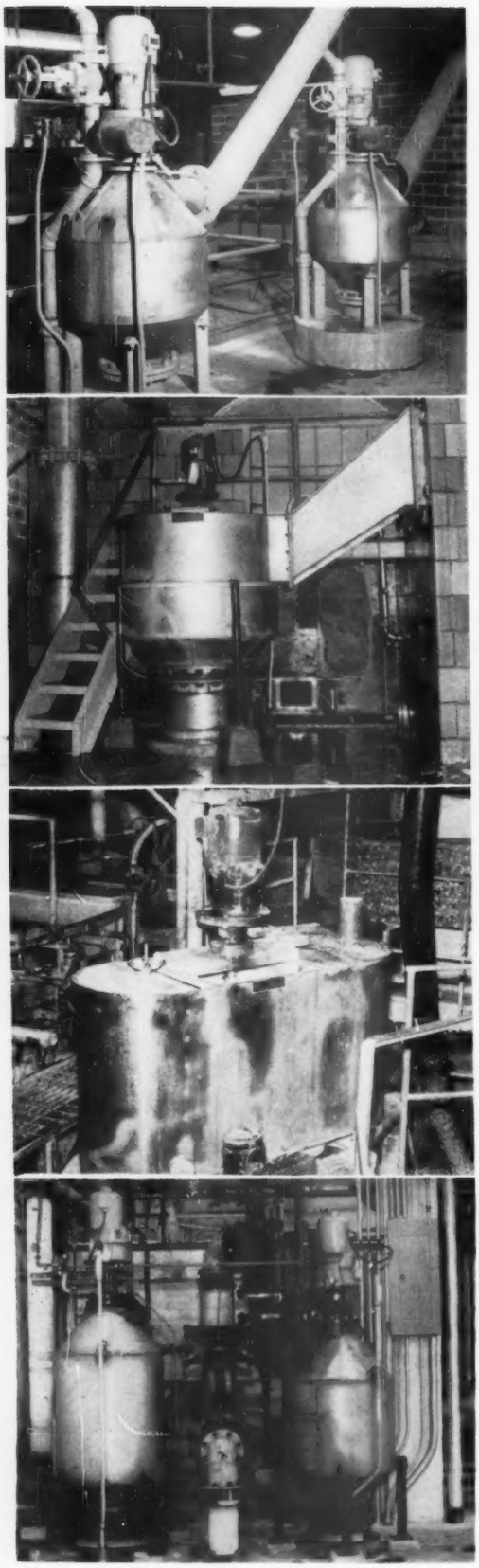
Let your Albany sales engineer suggest the felt best suited to your requirements, whether *you* place water removal first, second or third. Our goal, as always, to help you produce *more saleable tons per day!*

ALBANY

FELT COMPANY

Main Office & Plant, Albany, N. Y. Other plants: Hoosick Falls, N. Y.
N. Monmouth, Me., St. Stephen, S. C., Cowansville, P. Q.

"THE WORLD'S LARGEST MANUFACTURER OF PAPER MACHINE FELTS"



VARIATION: ± .02%

DIRECTLY AHEAD OF PAPER MACHINES *with*

DeZurik

AUTOMATIC - RECORDING STOCK CONSISTENCY REGULATORS

Without constant attention—without costly maintenance—under the most severe conditions, DeZurik Stock Consistency Regulators never vary in performance. They're guaranteed to hold consistencies within limits of plus or minus .1%, and many of them installed directly ahead of paper machines are holding consistencies to plus or minus .02%!

Three basic types adapt to a wide variety of installations such as regulating stock after high density pulp storage chests, after dry broke pulpers, couch pit wet broke control, brown stock washing systems, basis weight control, stock metering systems and refining systems.

Because quality control is so essential in your plant, let us show you how DeZurik Consistency Regulators provide dependable, accurate, automatic service!

DeZURIK CORPORATION
SARTELL, MINNESOTA.

"CAMERON helps us to plan for the years ahead"

. . . says J. W. D. Hierlihy, Mill Manager, Fraser Paper, Ltd., Madawaska, Me.

J.W.D. "JACK" HIERLIHY

. . . "to stay ahead of the pace we buy equipment larger and faster than needed. Speeds which seem excessive now may well be normal within a few years.

. . . "our new Imperial now runs at 4,500 fpm maximum normal speed. It's reserve capacity is 6,000 fpm.

. . . "Cameron's new slitter assembly has reduced the time loss on slitter changes by at least 50%.

. . . "the Imperial's faster, easier set-up and high running speeds permit greater production of top-quality rolls with an extreme variation of width and diameter".

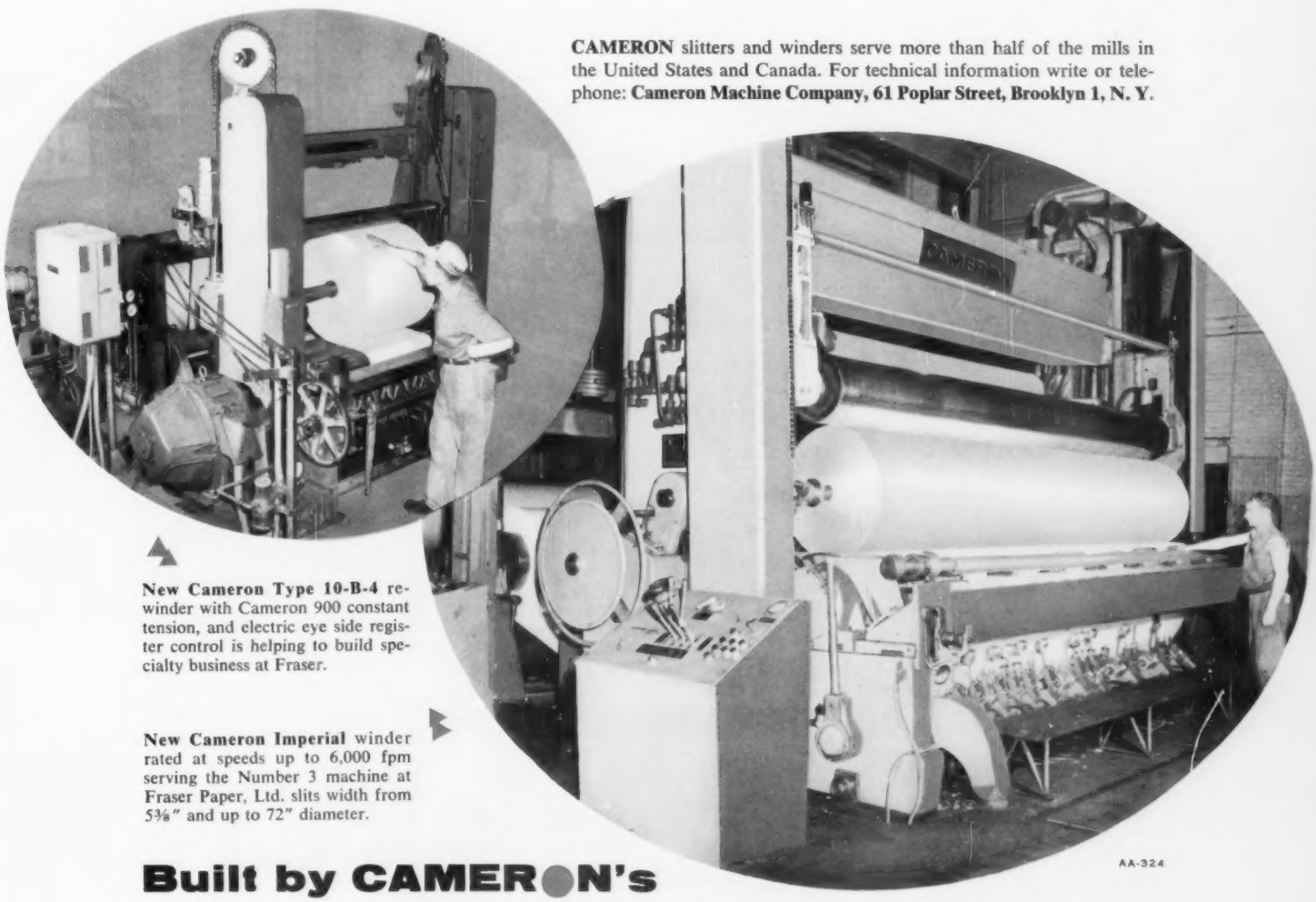
"Better Service for Our Customers"

. . . "with its ability to slit and wind rolls to almost any specification, the Cameron Type 10 has opened a new area of business for Fraser Paper, Ltd.

. . . "the Type 10, with electric eye, can reclaim telescoped or offset rolls without trimming, at speeds up to 2,000 fpm. This means substantial savings.

. . . "we have, ready for installation, another Cameron of larger capacity and greater speed to join the Type 10 in providing quicker service to our customers".

CAMERON slitters and winders serve more than half of the mills in the United States and Canada. For technical information write or telephone: **Cameron Machine Company, 61 Poplar Street, Brooklyn 1, N. Y.**



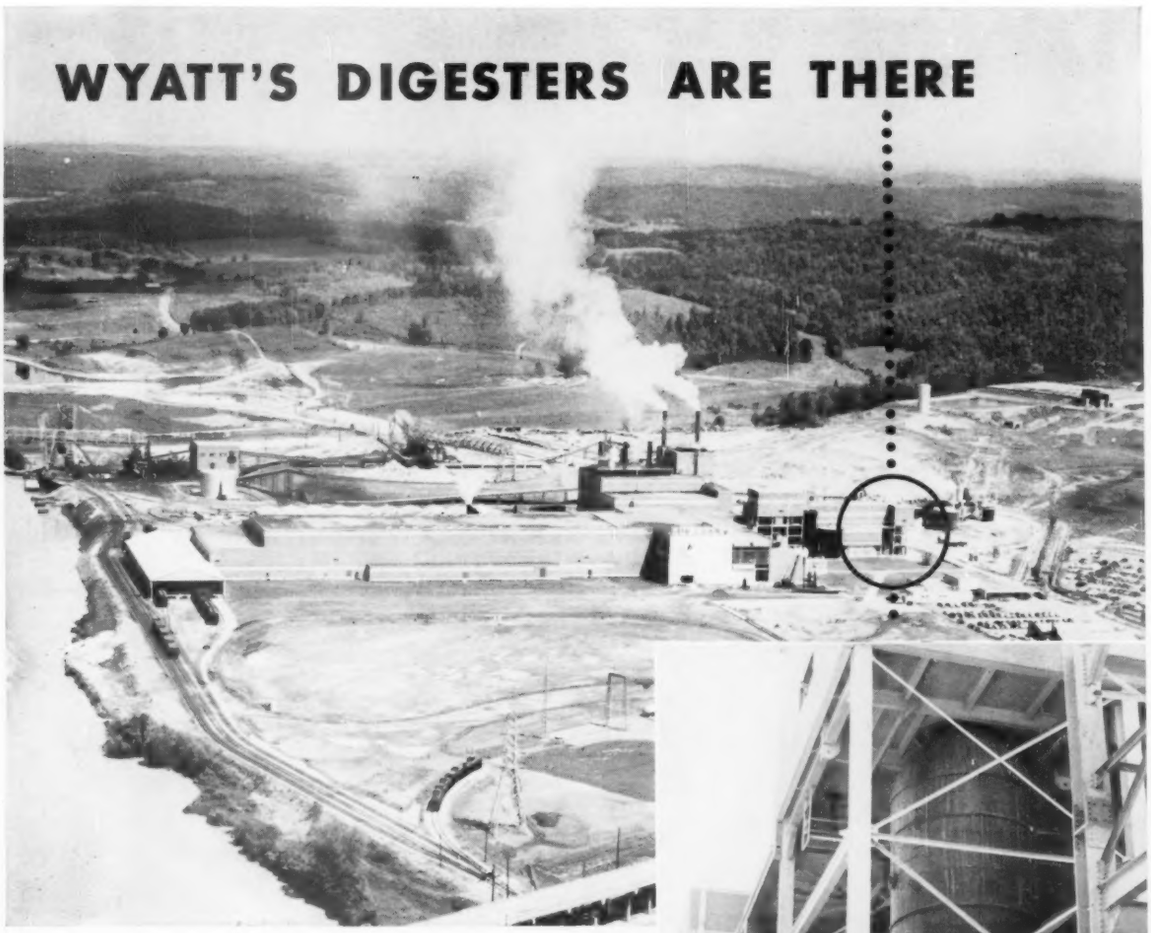
New Cameron Type 10-B-4 rewinder with Cameron 900 constant tension, and electric eye side register control is helping to build specialty business at Fraser.

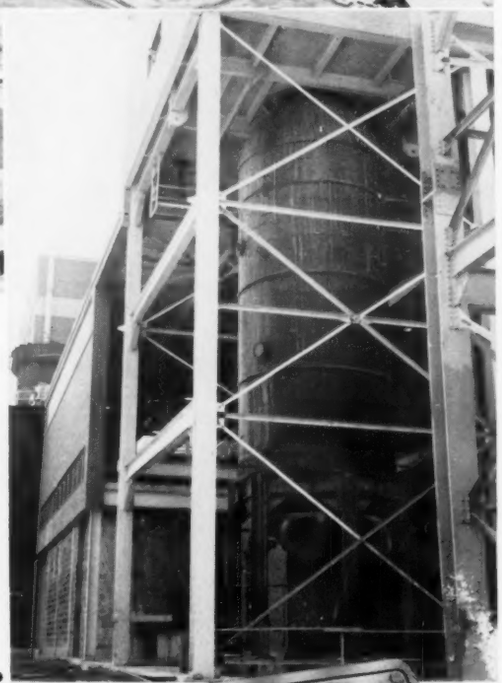
New Cameron Imperial winder rated at speeds up to 6,000 fpm serving the Number 3 machine at Fraser Paper, Ltd. slits width from 5⅜" and up to 72" diameter.

AA-324

Built by CAMERON's team of specialists

WYATT'S DIGESTERS ARE THERE





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Largest Newsprint Mill in the South

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DALLAS • HOUSTON

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A PULP & PAPER SPECIAL REPORT:

Here's a "Preview" of Paper Week

Expansion problems, threat of additives bill, new facts on pollution, what outlook will be for woodpulp, TAPPI plans

• As North American pulp and paper executives prepare for their 80th annual migration to New York for Paper Week (week of Feb. 17), a key problem to be discussed there will be new production.

"There's no question about it," pulp and paper sales managers tell PULP & PAPER, "we are going to have a lot more capacity coming in this year and next."

The big problem, one spokesman explained, is to figure out how to live with it. Industry executives, including the board of governors of the American Paper & Pulp Assn., will listen attentively to scores of speakers on this and other subjects.

Will Give New Pulp Outlook Report

L. K. (KEVE) LARSON, at his desk at 230 Park—with tower of Waldorf Astoria—where APPA, Pulp Producers and other meetings will be held—showing through his window.

At any rate, according to one highly regarded observer, serious repercussions from overexpansion are not expected to materialize in 1957. It may not come about at all. David L. Luke, Jr., president of APPA and of West Virginia Pulp and Paper Co., says, "The threat of overcapacity, coupled with the tight money supply, may encourage reconsideration of both the location and timing of some of the projected expansions. The fact that some already have been postponed is reassuring."

About his own company's expansion plans (totaling more than $100 million), Mr. Luke says, "Our program of continuing plant renewal and improvement is the product of long and careful study. It is well conceived from an engineering and technical standpoint and well balanced as to our other facilities and available resources. It is also calculated to arrest increasing costs and provide the greater product flexibility needed to meet requirements of customers and markets."

This year President Luke is expected to discuss (in addition to overcapacity possibilities), the proposed APPA-National Paperboard Assn. joint recruitment program, pending freight rate increases and legislative developments.

Additives Bills Threaten . . .

Of serious concern, as it has been for the past several years, are new anti-chemical additive bills in Congress, which might hamper progress and endanger the competitive position of paper in packaging. No time was lost when Congress convened early this year and two new restrictive chemical additive bills were proposed on January 3 to cover food packaging and food packaging materials. This definitely will be a hot item in 1957, and for packaging manufacturers will be a key issue. There's a lot of pressure for such legislation, PULP & PAPER was told.

Presides at Paper Week

DAVID L. LUKE, JR.: "The fact that some expansions already have been postponed is encouraging."

Veteran pulp observer, L. K. (Keve) Larson, Pulp Division sales manager, Weyerhaeuser Timber Co., who early in 1956 cited dangers of overexpansion, is expected to present an up-to-date pulp outlook for the future.

Waste paper, an oft-neglected subject, and one never covered before with prominence, will be discussed by Nathan A. Bergstrom, president of Bergstrom Paper Co. He will stress the economy of waste paper utilization and consequent conservation of forest resources and its economic implications to this industry. Ralph Kumler, secretary of the Waste Paper Utilization Council, estimates that it is possible to increase waste paper production to 21.5 million tons if collection systems used during World War II were to be put into effect. At present, waste paper fibers account for more than one third of the fibrous materials now used to produce the industry's estimated 31.5 million tons of paper.

G. J. Ticoulat, vice president, Crown Zellerbach Corp. (he's a "hard-sell man," says one of his contemporaries), is expected to describe sales techniques which might be used to put this greatly increased production into consumers' hands.

Controllers to Have Panel . . .

At its first open meeting, the Controllers Committee of APPA will feature a two-man panel, Ronello B. Lewis, vice president and controller, Olin Mathieson Chemical Corp., and Ely Francis, assistant controller, RCA.

Their subject: management planning and control. They will cover requirements for an effective budgetary control system, a review of financial analysis as a service by the controller for management, the use of charts and other visual aids, preparation of more effective accounting charts for management's use, management checks and controls which are effective in a decentralized organization, and possibilities and advantages of simplified accounting through direct costing and elimination of prorates.

Looking forward to a good year ("possibly another record year"), U.S. Pulp Producers Assn., Inc., at their annual meeting will listen attentively as the outlook for market pulp and total woodpulp economy is discussed by a representative from the Econometric Institute. They will also hear reports from presidents of the APPA, CPPA, Association of Pulp Importers and Pulp Consumers Assn.

A special report on pulp and paper developments in a select list of countries will be issued by Eric Lagerloef during the open meetings to be held by the APPA export committee during Paper Week. Foreign markets and trade opportunities will be chief topics. An executive of W. R. Grace & Co. will discuss his company's $46,000,000 pulp and paper expansion program in the Southern hemisphere.

APPA Program on Materials . . .

At the APPA materials committee open meeting the agenda includes:

1—A talk on power engineering—the use and cost of fuels such as natural gas, oil or coal by an engineer from the J. E. Sirrine Co.

2—New devolpments in chemicals for the paper industry.

3—The economics of waste paper with emphasis on how a paper company can benefit by its use. Jim Flannery of J. J. Flannery Co. will be the speaker.

4—The responsibility of purchasing agents under the Robinson-Patman Act, by Joe Sharp of the firm of Dunnington, Bartholow & Miller.

In addition to a symposium on liquid waste disposal, the National Council for Stream Improvement will feature two significant developments in atmospheric pollution studies.

No Satisfactory Air Pollution Samples . . .

Dr. E. R. Hendrickson, professor of sanitary engineering, U. of Florida, will present the research approach and survey procedure in atmospheric pollution problems. The big problem is that satisfactory sampling tehniques have not yet been developed. According to Executive Secretary Russell L. Winget, no two people will get the same results. Factors such as barometric pressure and temperature have to be evaluated. Mr. Winget compares atmospheric pollution studies to the position of water control 20 years ago. There is a need for developing proper techniques, he says.

Admiral A. L. Danis, professor of aereological engineering at the U. of Florida, will discuss the importance of local meteorological conditions in evaluation of atmospheric pollution problems.

Costly Plants for Liquid Disposal . . .

Presiding at the waste liquid disposal sessions will be F. B. Milligan, chief of industrial waste section of the Pennsylvania department of health.

Important will be an evaluation of bio-oxydation pilot plant studies at pulp and paper mills by Dr. Nicholas Lardieri of the Council.

Eight pilot plants are now in operation in Pennsylvania and, remarks Mr. Winget, this is going to be an expensive and difficult step for the industry.

Also important will be a talk on the technical and economic considerations involved in discharging paper mill effluent into municipal sewerage systems, by Dr. Isaiah Gellman, NCSI.

Many times, PULP & PAPER learned, sewer rental charges are far beyond reason and greater than if the company put in a system of their own. For instance, paper mills in a certain locality are currently facing threats to make them use the town's municipal sewerage system. Rental cost is $100,000 yearly.

Experimental production of superprotein from spent sulfite liquor may offer a solution to some sulfite mills. Dr. Anthony Gaudy, NCSI, will discuss this.

Measurement and reduction of color for pulp mill effluent will be discussed by Howard Brown, NCSI. While color itself is not pollution, such as solids, nevertheless the public sees it and draws wrong conclusions.

Five Canadian companies are now members of NCSI.

What Pulp Consumers Will Hear at Paper Week

A new postwar record for pulp consumption in paper and board mills was set in 1956 according to Reed R. Porter, executive secretary of the Pulp Consumers Assn. of U.S., Inc.

Close to 3,000,000 tons were used in 1956, exceeding 1955 by some 150,000 tons. With the right business climate, he says, pulp consumers are in a position to set another record for pulp consumption in 1957. Additional pulp consumption facilities in 1956-1957 will use around 200,000 tons.

Here, in essence, is what Mr. Porter is expected to tell Pulp Consumers at their annual meeting during Paper Week:

"In 1956 consuming mills were able to increase inventories to keep pace with rising pulp needs. This, plus additional investments, has made possible two developments.

1—An increase in world supply of paper grade market pulp in North America and Scandinavia.

2—A leveling off in the previous steep rise of European demand, particularly in England, second largest (to U.S.) pulp consumer.

"Enlarged pulp needs of U.S. pulp consumers were obtained from all three major sources: Scandinavia, Canada and U.S. Distribution among these supply areas was:

47% from U.S. pulp producers; 40% from Canada; and 13% for Scandinavia. This is about the same proportion as 1955.

"By grades, U.S. mills supplied 60% or more of both bleached grades while Canada was the principal source of unbleached with particular emphasis on sulfite (about 70%).

"Consumers of market pulp may well be in for a new experience in 1957," says Mr. Porter, "the pleasant sensation of a plentiful supply of

market pulp on this continent. New mills now under construction or scheduled to start construction between now and our 1958 annual meeting will bring in around 700,000 tons or about twice the tonnage now imported from Europe.

"It is obvious that North America will be entirely self sufficient in total market pulp, although this may not apply for all grades," says Mr. Porter.

Speaker at annual Pulp Consumers luncheon on Feb. 20 will be Dr. William B. Mayer, chief psychiatrist for the U.S. Army. He had the job of interviewing returning prisoners from Korea. He is expected to tell why 25% surrendered without firing a shot and why for the first time in the history of our armed forces 5 to 6 guards could hold 500 to 600 men in a compound without an attempt at freedom and why one of three prisoners turned a Communist sympathizer or cooperated with the enemy.

TAPPI Meeting Plans

TAPPI is getting pretty big. There will be some news of expansion of its officers and executive staff, required to carry on its activities. What will be on the industry's technical mind as TAPPI meets for the 42nd time in the Commodore in New York? Here are some subjects to be discussed:

The industry's growing alarm at the shortage of technically trained manpower is indicated by scheduling of opening speaker's topic: "The Paper Industry Takes Steps to Increase the Technical Manpower Supply," by Harry F. Lewis, v.p. of the Institute of Paper Chemistry.

Water resources, treatment of mill effluent and re-use of mill white water will be themes under which the industry will tackle another growing problem, that of water. Some 16 papers and panel discussions will try to solve some of the industry's water problems.

Hawaiian Papers Come Too Late . . .

The entire agricultural fibers session will be devoted to Hawaiian bagasse with 10 papers scheduled for delivery. They will cover various pulping and bleaching procedures, chemical composition and fiber shipping containers from bagasse. However, these papers will come after enthusiasm in Hawaii for making pulp or board from bagasse has greatly cooled off, according to direct reports to PULP & PAPER. Marketing potentials are much poorer. For the first time in several years the sugar growers' annual report does not even mention paper or pulp research.

Have Messages for Paper Week

REED PORTER (left) will tell Paper Week audience "with right business climate, pulp consumers will set another record." NATHAN A. BERGSTROM (right), will stress economy of waste paper utilization.

A novel moisture meter for instantaneous measurement of moisture in paper, Aquatel, will be reviewed by J. A. Hart and W. Gallay of the E. B. Eddy Co., Hull, Que.

A new type of synthetic resin, never before on the market, will be introduced during Paper Week by American Cyanamid Co. According to one report, it is a "hot item." Name: Acco-Strength 2386. Function: Dry strength.

Merchant L. Cushing of A. E. Staley will present an evaluation of combinations of starches with natural gums as papermaking aids.

Harris O. Ware, formerly with Hercules Powder Co., now with Beveridge Paper Co., will explain a new technique for measuring strength improvements by the separation of the overall effect of chemical additives in three parts. This is a technique devised to estimate the value of strength producing additives and equally satisfactory for comparison of different pulps made on different pieces of refining equipment.

David Cowan, statistical control manager of McLaurin-Angier Corp. will explain a simple correlation technique which is "much easier in concept and application" that multiple correlation technique.

Major problems in the reuse of water in specialty mills will be detailed by C. H. Hill, of Sorg Paper Co. He will talk about water usage and solids losses for some common paper grades, slime forming organisms and solids buildup for typical manufacturing runs.

The utilization of kraft knots and screen room rejects in semibleached sulfate pulps by using proper screen room and bleaching techniques will be revealed by J. K. Dyer and J. N. Swartz, Bowaters Southern Paper Co. Knots and rejects have been successfully refined and bleached without being recooked.

Other subjects:

TAPPI will also discuss the use of titanium dioxide to prevent show-through in paper; wetting angle determination—a tool for adhesion and coating; glass fibers as paper additives; characteristics of a basically new type belt drive. Various papers will discuss aspects of semichemical pulping.

The cylinder board session will feature symposiums for improving the printability of boxboard.

Other sessions will be held on alkaline pulping; fundamental research; dimensional stability; corrugated containers; mechanical and semichemical pulps; wet strength and interfiber bonding; microbiological and acid pulping.

F. K. Weyerhaeuser Named President of Timber Firm

Frederick K. Weyerhaeuser has been elected president of Weyerhaeuser Timber Co. to succeed the late J. P. Weyerhaeuser, Jr., his brother.

Charles H. Ingram, vice president and general manager, was named executive vice president. John Musser, board member from St. Paul, was elected to the executive committee. Frederick Weyerhaeuser continues as chairman of the board and president of Weyerhaeuser Sales Co.

Onion-shaped Domes of St. Basil's Dominate Moscow's Red Square

Paper Industry Executive in Russia

Plans for 5 newsprint mills, 7 dissolving pulp mills, working and living conditions inside Iron Curtain

Story and pictures by

HOWARD E. WHITAKER
President, The Mead Corp.

● Seven days in Russia. Hardly enough to get a balanced view of the Communist way of life today. Yet we considered ourselves extremely fortunate to get even this glimpse while the Iron Curtain was raised.

We were prepared for special treatment, knowing that they wanted to show us only the best things. They did, and provided every courtesy, but we saw a great deal besides. We were allowed to go everywhere in the cities we visited, take all the pictures we wanted, and we asked a thousand questions. Many of us spent hours on the streets by ourselves. Everyone seemed friendly and very curious, particularly about life in the United States.

We arrived at the Moscow airport after dark. I was assigned to the Metropole, a typical old-fashioned European hotel with large rooms. Victorian furniture, ugly lamps, but plenty of lights, beautiful Persian rugs on the floor, and cutglass decanters and drinking glasses. We had private baths, tile-lined, plenty of soap, paper, and good towels. The plumbing was pretty bad, uncertain in its operation; but we always had plenty of hot water.

We had a late dinner in the main dining room, an elaborate banquet hall with heavy Victorian furnishings. The food was good, and there was quite a variety. There was an orchestra, and one young Russian, wearing boots, went from table to table asking all the girls to dance.

Out on the streets after dinner, about midnight, the movies were getting out. Sverdlov Square, in front of the hotel, was full of people walking home or to the subway. Many big apartment houses, all lit up, had no curtains at the windows. There were traffic lights in places, but the people pay no attention to them—like New York.

Crowds seem to shop at night. I went in and out of stores for at least a mile, out towards the suburbs. I bought things myself, mostly by sign language. First you pay your money at a cashier's desk, get a receipt, and then change the receipt at the counter for the goods.

Visits University And Exposition . . .

Next day we went to the big university in Moscow, whose main building, some 30 stories high, stands out on the skyline and can be seen for miles in any direction. Two huge wings containing dormitories house some 6,000 students, two to a room, each with its private bath. There are

23,000 students enrolled. We were told that 51% are women.

The following day we visited the Agricultural and Industrial Exhibit, a sort of permanent World's Fair. Each Soviet Republic has a building to display its products and way of living. Other pavilions are for agricultural activities and different industries and trades.

On the way to the exhibition, we passed many new apartments. Then we reached the area where the private homes are. These are old and battered and have not been kept up at all. Many homes are built of solid logs. They may be bought and sold, but the land belongs to the State. When the apartment program reaches the area, they'll be torn down and the owners moved.

There is no choosing where you live in Moscow. Rents vary with wages and salary earned, space allocation is on the basis of the number of people in a family. In Moscow, the allowance at present is about seven square meters (about the same as square yards) per person.

At the exposition, we tramped all day, took many picures, and saw a great many things. We ate melons and grapes from Uzbekistan, saw bulls that were six feet high, all kinds of wonderful craft work, their newest machinery, automobiles, etc., and wound up at the Atomic Energy Pavilion, "Power for Peaceful Purposes," where there is an atomic pile in operation. Moscow has a 5,000 kw atomic plant in operation as a commercial unit this past year, feeding the electric utility system. They also have an atomic-powered icebreaker, but when I asked about submarines, they said they didn't know.

Russians Expand Their Paper Industry . . .

I spent a lot of time in the Paper and Timber Pavilion. They have ambitious expansion plans, including five newsprint mills and seven dissolving pulp mills to be located east of the Urals in Central Asia. I was surprised to find the wide variety of paper products now available. They have full information on the most recent advances in bleaching, liquor recovery, and utilization of byproducts. But they are somewhat behind on machine speeds. Their latest newsprint machine, to be completed this winter, is designed for 1250 fpm.

We visited a ball-bearing factory in Moscow employing 12,000, 80% of them women. Apparently the women do all the hard work in Russia. The men work in the government offices. With the paper work needed to run a totalitarian state, it takes nearly half the population.

Although the ball-bearing plant included a department which had been almost completely mechanized, we discovered that the large part of the output was produced by individual machine operators, one piece at a time. Working conditions were poor, lighting was bad, with deep shadows at floor level. Machines operated without safety guards, and apparently little thought was given to safety.

Most of the workers live in new apartments next door to the factory. Their children are cared for in a nursery by teacher-supervisors, and they sleep in the nursery. The older children go to schools on the same premises, and the parents generally visit them on weekends. Exceptional students are sent on to technical colleges or the universities. All education is at the expense of the State, so everyone is on a scholarship, so to speak. There is no choice as to whether a student goes on to college, of course. It depends on selection by the authority, but it is a great honor and privilege to be selected.

Busy Factories Lack Modern Methods . . .

In Kiev we visited a large shoe factory, producing about 20,000 pairs daily on two shifts and employing 3,800 people, 80% of them women. Although they told us the plant had

Shares an Unusual Experience with Industry

Howard E. Whitaker, of Dayton, O., president of The Mead Corp., wrote this article, and he also took all the pictures and wrote their captions.

As industry associates who know him are well aware, Mr. Whitaker needs no assistance in writing speeches or articles. In this case, he has achieved what is readily recognized as an expert reporting and interpretive job about Russia.

Mr. Whitaker made the trip with a small group of U.S.A. businessmen shortly before the uprisings in Poland and Hungary.

It is characteristic of him that he shared this unusual experience with all Mead employes through the company's excellent magazine, *The Mead Reporter*. And, here, he now shares it with the readers of PULP & PAPER throughout the United States and Canada and in over 40 other countries where pulp and paper is made.

HOWARD E. WHITAKER, Mead's president. He wrote this penetrating study of Russia, took the pictures (and many more) and wrote the picture captions.

Everyone is in Competition. Workers in Plants Post Individual Performances Daily.

GUM, Big Department Store. Windows Display Costly Goods; Inside is Like a Big 5 & 10 Store.

My Interpreter, Jahia Danko (right) and another Guide at Bolshoi Theater, Where We Saw Magnificent Ballet and Opera

Sunday at Exposition Finds Crowds Buying Sandwiches and Cakes in Front of Ukraine Building.

Police Guard Kremlin Gate, Where Rulers Pass to Offices.

A Russian G.I. Takes Picture of His Buddies at the Fair.

been rebuilt after having been bombed out by the Germans during the war, the whole impression was that it was 30 or 40 years old. Stairs were badly worn, to the point of being a real hazard. The machinery was rather antique according to our standards. Here again, there were no guards on the presses, drills, or machine cutting tools. It made us wince to see the girls trim the soles and heels on open cutting machines.

The factory has its own nurseries and schools. Legal minimum age for women workers is 18, but some girls start at 16 as trainees and work short hours. Wage rates start at 480 rubles a month; average wages range between 650 and 680 rubles a month. The shoes they make sell from 100 to 300 rubles a pair.

In the evening our plane took us to Kharkov, about 150 miles east of Kiev. Kharkov is also a very old city, older than Moscow. It was taken by the Germans three times during the war and retaken by the Russians each time. It has been rebuilt as an industrial center, and there are a number of heavy industry plants there. We visited two, a plant making motors of all sizes and a tractor plant.

At the tractor plant, the handling of materials was archaic, but with plenty of labor to do the work, it is probably not taken as a serious matter. There was a final assembly line, similar to the Detroit system, where the parts were put together, and a finished tractor was started up and driven off the end every three minutes. Here again, lighting was scanty, and while there seemed to be plenty of sweepers cleaning the aisles, we had to be careful not to stumble over things.

Mr. Whitaker's Conclusions . . .

As I think about my trip, I feel that tremendous progress has been made since the war in the reconstruction of Russia and improvement in living conditions. From a situation which must have been chaotic, following the bombing of the cities, they have reached a level where a reasonable amount of order prevails.

The use of the Five-Year Plans with specific objectives for everyone in every line of activity, coupled with the natural nationalistic feeling, has created a determined zeal on the part of everyone to succeed.

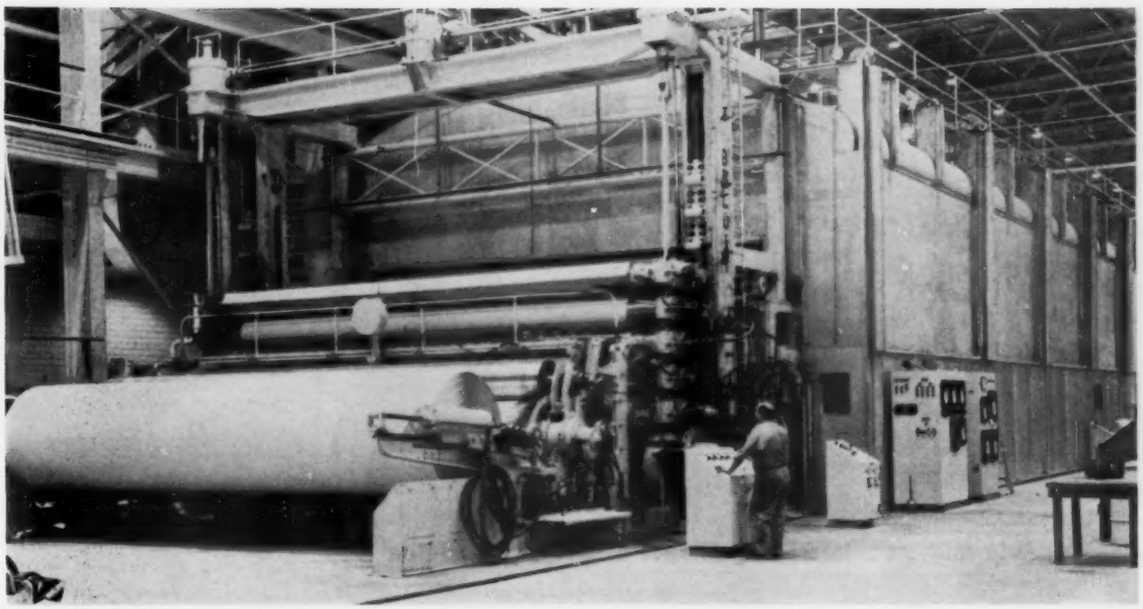
Every individual, man or woman, in Russia has a job. Some sort of work is assigned to him. But while everyone has a job and shelter, there is no choice as to what one does, where one works, or where one lives.

Mass education of the younger generation is the finest accomplishment of the Communist system, in my opinion, but I think it will be the cause of their downfall. They have developed an inquisitive generation. These youngsters now want to know more about the rest of the world, and the appetite for knowledge cannot be satisfied. For example, they cannot understand why, if America exploits her working people and underprivileged, these same working people seem to have so many luxuries and the finer things of life.

I cannot conceive of any possibility of a violent uprising in Russia similar to the one in Hungary. Conditions are improving so rapidly and the average person is so much better off than before that in their eyes the Communist plan is working quite well. There is certainly no sign of any shortage of food, and there are plenty of the staples in the stories: bread, cakes, milk, butter, cheese, tea, and a variety of meats.

The Russian people seem to want peace and to be left alone to work things out. But they also fear that the Americans want war, and when you are in Moscow—looking out, so to speak, through the Iron Curtain—that ring of American air bases in England, France, Spain, and North Africa certainly looks like business.

With the present leadership of tough executioners in the Kremlin, with their controlled press and police and closed borders, it will be a long, long time before the average Soviet citizen understands our real intentions, and that we want peace, too.



Runs 2,250 fpm! World's Speed Record attained on this #6 Machine of Great Northern

Great Northern's No. 6 Hits 2,250 fpm

• Great Northern Paper Co.'s newest machine, its No. 6 Beloit Fourdrinier at East Millinocket, Me., attained what is believed to be a new world's speed record of 2,250 feet per minute in manufacture of salable newsprint on Dec. 22, according to announcement by M. C. McDonald, president, and Roy V. Weldon, executive vice president.

Incidentally, this 292 in. wide machine is the widest in the U.S.A., making any kind of paper. It is exceeded in width by only two other machines in the world, one in London, Eng., and the other in Fort William, Ont. No. 6 was started up in Aug. 1955, about a year after No. 5, a 276-in. Beloit Fourdrinier, also designed for similar high speeds.

Testifying to the lively competition now going on among newsprint manufacturers, to set faster and faster speed records, the Great Northern Co. sent PULP & PAPER a statement sworn before a justice of the peace, as proof that its new speed mark was authentic.

Proud signers of the document included J. H. Heuer, asst. manager of manufacturing; Warren F. Daniell, manager of engineering; Jim Starkweather, chief engineer; R. E. Crossley, chief electrical engineer; D. F. Pollard, technical director; A. E. Levensailor and Vaughn Fitzherbert, supts., and William H. Brown, T. Fiske and E. Stacey.

Factors Enabling Higher Speeds . . .

Important factors in enabling No. 6 to reach such speed are its two twin air bleed presses (this application of the air bleed principle was first described in PULP & PAPER, Nov. 1954). Its purpose is to keep the sheet away from the felt except at the nip itself so air can bleed down through the felt at both incoming and outgoing sides of the nip. An unusual Twinver press is on No. 6. This is a 3-roll inclined press. This arrangement makes the second nip an inverse press. And of course, the suction pickup machine, eliminating the open draw between Fourdrinier and press section, makes possible high speed transfer of the sheet from Fourdrinier into press section.

Mechanical vs. Electrical Drives . . .

Beloit's mechanical differential drive provides the drive for No. 6. This is interesting to close followers of the "battle" for newsprint speed honors, because another new machine in the U.S., which has been run at 2,150 fpm and is a sturdy "challenger" for top honors, is served by an electrical drive. For No. 6, the lineshaft is at machine floor level, with all sections driven together, holding draw control by Link-Belt PIV units.

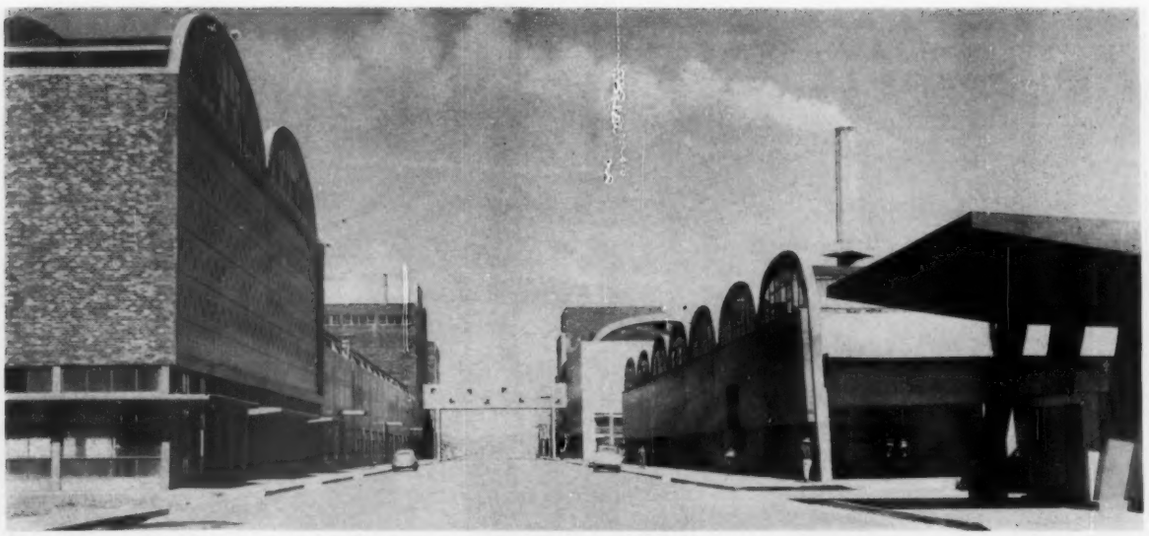
Ten Shartle Selectifier screens, fed from a single inlet header and discharged to a single main header, are a speedup factor, too. First Selectifiers ever used on newsprint serve East Millinocket's No. 5. Operating personnel say they remove up to 95% of shives. Accepted stock passes through a Beloit teardrop stream flow valve into headbox through crossflow distributor. Air pressure maintains constant level in the headbox.

Unusual Hood . . .

Another feature which undoubtedly contributed to No. 6's claimed speed record is its totally enclosed Ross Engineering Corp. dryer sections hood. The new Great Northern machines have the first such installations in the U.S.A. They were first developed for Canadian mills by F. W. Hooper of Ross Engineering of Canada, Ltd. Operators said more uniform drying results from prevention of drafts and less air is needed than for open hoods. Air is heated to higher temperatures.

The Chemigroundwood process, whereby 4-ft. hardwood logs are softened in vertical digesters before going to grinders, is part of the furnish for No. 6 (see PULP & PAPER, Apr. 1955, for story on process), also sulfite and regular groundwood.

Newsprint men say the new speed mark made at Great Northern probably will serve to stimulate other newsprint producers to push their machines to faster speeds, and more records may be anticipated.



Unusual Pulp Mill . . . Interesting Shapes of Concrete and Tile

"Hands Across Border" Aids Industry Progress

Background on Chihuahua mill from P&P correspondents

• One of the most significant developments in advancement of the Mexican pulp and paper industry is the joint enterprise in the state of Chihuahua of North Americans and Mexicans in the operation of the new Celulosa de Chihuahua, S.A.

Over ten years ago, when the U. S. Government was giving special encouragement to expansion of the Mexican pulp and paper industry, there was much talk of the potentials in Chihuahua (shee-wa-wa), because of its rich timber resources. The George F. Hardy engineering firm made a survey for a possible mill and other interests also investigated. They were discouraged because of the mountainous character of the country and the minimum supply of water. But today, mills are being operated with less water than was formerly considered necessary (one major North American company reports its newest mill uses only one-third the water which had been thought necessary a decade ago), and with mechanization, mountains are less of an obstacle.

When a PULP & PAPER editor made a tour of some 12 major Mexican mills and operations in the late

Continued on page 48

Chihuahua's famous Cathedral—Built in 1728

Story Direct from Mexico of New Bleached Kraft Mill

How Kimberly-Clark carries out a cooperative project

A first hand story of the new bleached kraft pulp mill in Chihuahua, Mexico, by the Kimberly-Clark publication "Cooperation":

• Like a multi-colored jewel, set on a plain, yet lying in a valley of the Sierra Madres mountain ridge, is Celulosa de Chihuahua, S.A., for which Kimberly-Clark Corp. has assumed technical direction under a long term agreement with the Mexican company.

Technical men from the corporation's Research and Development Center, Engineering and Woodlands divisions; men from the LongLac pulp mill at Terrace Bay, Ont., from Niagara and Neenah, Wis., and from the Coosa River pulp and newsprint mill in Alabama, have converged on the new Mexican industrial plant to give the technical cooperation specified in the contract that was signed in July.

What Do the Arrangements Involve? . . .

The corporation is furnishing necessary technical personnel, the know-how of modern operating methods; it is making available all of its technical and engineering resources as well as advanced understanding of process practices of modern sulfate mills.

Kimberly-Clark will allow the training at its mills of selected Mexican technicians. It is furnishing advice and counsel for forest conservation and wood use planning. It also will give necessary assistance in the sale of the pulp.

Why did Kimberly-Clark enter into this agreement? Kimberly-Clark needs pulp for its paper and wadding in Mexico City. Since quality is of great importance to Kimberly-Clark manufacturing and products, it is interested in helping the pulp mill make the best possible product. And because Kimberly-Clark for many years has been concerned with good forestry management for a continued tree crop, it is only natural that it should be qualified and willing to offer its know-how in the woodlands operation that supports Chihuahua's great pulp mill. Quality starts with woodlands operations in the last analysis for good wood is needed to make good pulp.

Pulp Markets . . .

Will Celulosa de Chihuahua manufacture pulp only for K-C's La Aurora mills in Mexico City? No. Celulosa sells to all of the 13 paper mills in Mexico, of which La Aurora is one. However, there are only two other pulp mills in Mexico and they are integrated units, manufacturing pulp for their own use. Celulosa de Chihuahua is the only manufacturer of cellulose pulp for the market.

Description of Chihuahua . . .

Celulosa de Chihuahua takes its name from the state in which it is located and the capital city, 64 miles to the northeast. The state is the largest in Mexico, bordering on Texas and New Mexico. It is primarily the mining and large ranching land of Mexico. In fact, the plain on which the Chihuahua mill is located once was one of the largest rancheros of Mexico with a huge hacienda which was like a small village. The first land to be sold from this large ranch holding went to the Mennonites (a religious sect of the Protestant religion) who came to Mexico from Canada in 1923. Today some 26,000 of these people live in small settlements in a colony at the northern end of the plain. They raise grains, vegetables and cattle.

Chihuahua, as the capital city, has a population of about 150,000 people. It is a modern Mexican community in the midst of its ancient heritage. Its famous cathedral was built in 1728 and at one time was the headquarters for Pancho Villa, who quartered his horses in the famed cathedral. The city, 4400 ft. above sea level, lies on Mexican Highway 45, almost directly south of El Paso, Tex. Places of inter-

Ponderosa Pine . . . Raw Material for Chihuahua Mill

Rail Siding and Conveyor Chain for Peeled Wood

Modernistic Laboratory . . . Windows in Varied Colors

est to visitors include the colonial aqueduct, completed in 1864 and now in ruins, the underground tunnels which connect the cathedral with the San Francisco church, noted for its many old paintings.

A beautiful black-top highway, just two years old, runs from the city to the mill.

Celulosa de Chihuahua is located on the shore of the 15-mile long lake, Laguna Bustillos, and along the Chihuahua Pacifico railroad.

Colors Used Freely . . .

The mill is of concrete and colored tile—red, blue and yellow—and because of this colorful exterior does not look much like a manufacturing plant. It is situated near the little adobe hut village of Anahuac which has a population of 5,000 persons, who are for the most part trained as farmers and ranchers. One of the unique features of the mill location is that one travels 2,200 ft. above the city of Chihuahua in the 64-mile trip to the mill, yet the plain on which the mill is located is in a valley.

A new townsite is being constructed to the north of the mill site. Plans call for construction of 260 new homes of tile and concrete block; new churches and schools. Several homes are already occupied.

Near the mill is a large, modern 167-room hotel, operated by Celulosa de Chihuahua. Behind it is the Staff House where Kimberly-Clark technicians, including both Canadian and United States personnel, live.

Similar to K-C Kraft Mills . . .

The mill itself is basically the same as the pulp mill of the LongLac Pulp and Paper Mill at Terrace Bay, Ont., and the sulfate pulp unit of the Coosa River newsprint mill in Alabama. The equipment is Italian, German, Swedish, Swiss, Mexican and American. Oil is consumed as the main fuel. Wood comes from the Sierra Madres ridge where Ponderosa pine grows in abundance. It is similar to the wood of the west coast.

The mill's woodlands operations are centered at the town of Madera, which is Spanish for wood. All of the wood comes into the mill by rail. It can be harvested the year 'round and the logs are peeled before they are loaded on the rail cars. Reforestation is an important part of the woodlands operations. A nursery has been developed.

What are Some of the Differences? . . .

Well, everything is in Spanish and Kimberly-Clarkers are learning the language. All are enrolled in classes which meet one half hour each day. And each one has an unusual piece of equipment as he goes about his job, a Spanish-American dictionary.

Another difference is that in most other mills or the management units of Kimberly-Clark, people were trained for the jobs before they actually started work. In this case, however, the people are being trained on the job. The 900 employes of Celulosa de Chihuahua are very hard workers and very cooperative in their relations with Kimberly-Clark personnel. Twenty-six graduate Mexican chemical engineers and 10 other engineering graduates are the backbone of the technical force at the mill.

The weather is similar to northern Florida. It is necessary to have heat in the fall evenings. It snows occasionally but the snow does not last long. The rainy season begins in July and ends in October. Duck hunting in November and December is one form of recreation for employes. Baseball and basketball are two other sports interests and there is an open basketball court near the mill.

What do Kimberly-Clarkers Say About It? . . .

The state of Chihuahua is becoming an industrial area as Mexico becomes another frontier in the industrial development of the North American continent.

Eloy S. Vallina, chairman of the board of Celulosa de Chihuahua, S.A., explains that Kimberly-Clark's background of experience and prestige in the pulp and paper industry "is of direct interest to our company, inasmuch as its La Aurora mills will be a customer for our production and a link in helping us to establish pulp standards and also standards of quality for paper and other end products. In every way we have confidence that the relationship with Kimberly-Clark will be of mutual benefit for both companies and in the immediate and long term interest of the pulp and paper industry of Mexico."

Hands Across the Border

Continued from page 46

'40's, Chihuahua mill talk was already being heard. The nation's first mass-production mill—a kraft pulp and board mill—had just been built at Atenquique, in steep mountains west of Guadalajara, using large size virgin pine wood. The Czechoslovakian immigrant who created this mill died unexpectedly and the enterprise was taken over by the government which had advanced major loans towards it.

For the second time in the history of this industry in Mexico, the government became a principal owner in a pulp mill—at Chihuahua. It advanced 50% of the financing. Snia Viscosa, an Italian company which is world-famed for its rayon manufacturing and dissolving pulp and other varied activities, was called upon to build the mill. It was given a 25% ownership and was committed to buy, at international prices, any surplus of the mill production that was not absorbed domestically.

Location of Chihuahua Mill

Millside is on shore of Laguna Bustillos, 64 miles southwest of city of Chihuahua. Woodlands operations are centered at Madera.

Sulfite dissolving pulp had been the field in which Snia Viscosa was most successful. There was a strong demand for dissolving when the Chihuahua mill was built. However, it was to make these grades by a kraft process. And then demand for this grade fell off. The mill was not running regularly before K-C took over.

Snia Viscosa's success in building and operating a bisulfite rayon pulp mill, Saiccor mills in Natal, South Africa, in a three-way combine with Cortauld's of England and South African interests were reported in PULP & PAPER's 1956 WORLD REVIEW NUMBER. Also its activities in Italy, where Snia Viscosa has various highly regarded manufacturing units, including rayon plants, pulp and paper machinery operations, diesel locomotive and electrical equipment plants.

Frequent Reports on Chihuahua . . .

PULP & PAPER received frequent reports on the Chihuahua enterprise from its own correspondent in Mexico, and also from Eloy S. Vallina, chairman of the board of Celulosa de Chihuahua, Rafael F. Vallina, general director at the Chihuahua operations,

and Carlos Trouyet, of Carlos Trouyet, S.A.

The Vallinas have been interested in Chihuahua from the outset. In the accompanying article, Eloy Vallina expresses confidence in the new arrangement for operation with Kimberly-Clark, which will be able to utilize a portion of the production for its expanding mills in Mexico City. Also just recently, PULP & PAPER received word direct from Rafael Vallina at Chihuahua indicating a prosperous outlook for this new year for their mill.

Kimberly-Clark's experience in the sulfate pulp field at Coosa River in Alabama and in Ontario figured to be invaluable in changing over the Chihuahua operation to sulfate pulps for paper, instead of dissolving.

A Variety of Equipment . . .

The mill was originally designed for 165 U.S. (short) tons a day rate and it had reached that mark in the year before Kimberly-Clark took over. As the accompanying Kimberly-Clark report states, the equipment which was installed by Snia Viscosa is from several countries.

Swenson evaporators, washers and bleach liquor plant equipment were made in the U.S.A., for example. The Kamyr-type bleach plant, the Lindblad high intensity screens and Flakt dryer for pulp are among the Swedish type equipment. A Babcock & Wilcox recovery boiler, while an engineering product of the U.S.A., was built in Italy. There are 6 large vertical stationary Swedish digesters of 6500 cu. ft. each. The Bergstrom-Trobeck oxidation system for reduction of gas losses and odor, and providing anticorrosive and other benefits, was one of the distinctive features of this mill as built by the Italians, and use of the Bergstrom towers is still fairly new in North America, where a few kraft mills are now using them.

Woodland operations at Chihuahua, also now under direction of Kimberly-Clark forest production experts, provide raw material for several economically integrated plants, including a large plywood plant, sawmills, planing and creosoting plants.

In due course of time, Chihuahua is expected to prove out as one of the most successful of forest industries south of the Rio Grande, based on principles which have proved successful in U.S. and Canada.

Kimberly-Clark's Mexico City subsidiary, the new "La Aurora" mill—San Bartolo Naucalpan mill, brought its new creped wadding manufacturing machine into production early in November. This is one of two "La Aurora" mills which Kimberly-Clark acquired in association with Jeronimo Arango, textile millowners, many months before it became involved at Chihuahua, and it has been adding to production at both these mills, besides adding one of its creped wadding machines at one of them. The older "La Aurora" mill, written up in PULP & PAPER on a visit in 1948, is at Fernando de Alva Ixtlixochitl. It makes fine papers.

ERNIE MANDERS, transferred to Chihuahua from Coosa River Mill in Alabama, where he was Tech. Director. A U. of British Columbia graduate, he was former Tech. Director at LongLac Mill in Ontario. Several other K-C men have gone to Chihuahua on temporary assignments.

Phil A. Bachelder, who had been secretary and assistant treasurer for Coosa River Newsprint Co., and was with the Kimberly-Clark organization for years, was chosen to go to Mexico to be manager of the Mexico City La Aurora mills. Peter Heintskill, of Kimberly-Clark, and Julio Colon, "La Aurora" veteran, head the two mills. Since then, there has been a veritable parade of Kimberly-Clark men to both Mexico City mills and Chihuahua. Many are there on temporary technical, engineering or other assignments. Mexican technicians and graduate chemists and engineers likewise will benefit by training in Kimberly-Clark mills in the North.

The "Aurora" Mills . . .

The older of two mills in Mexico City environs which K-C acquired has an Escher-Wyss Fourdrinier machine, 69 in. wide, and a complete groundwood plant besides the paper mill.

Carlos Kinkel, a German-trained papermaker, was general manager at the time PULP & PAPER visited the mill. He left the company about three years ago, and was replaced by Andre Mathier, one of the owners.

At the time the second mill at San Bartolo Naucalpan was built, Mr. Kinkel was still general manager and the addition was his own idea. The new mill was completed by the end of 1953; its machine, which is also an Escher-Wyss, 106 in. wide, was put into commission in Apr. 1954.

The production at the old mill was about 10-12 metric tons of fine papers, and the production of the new mill about 15-18 metric tons, when Kimberly-Clark took over.

Frank Wooldridge is sales manager of Kimberly-Clark de Mexico, the paper company.

Alberta Pulp Mill Soon to Start Up

North Western Pulp & Power Co. at Hinton, Alberta, is scheduled for a mid-February startup.

The $35,000,000 project, west of Edmonton, is now nearing completion. Twenty-three contractors have been engaged during the past 20 months in getting Alberta's first mill ready for operation at full 430 tons-a-day capacity during the first quarter of 1957.

Advices from Hinton indicate that the mill may be enlarged shortly to increase overall investment there to some $100,000,000.

One of the big jobs associated with the pulp mill project was the construction of a $5,000,000 pipeline, and this has been completed by North Canadian Oils, partner of St. Regis in the pulp enterprise. The pipeline will transport natural gas 135 miles from the Alexandria gas fields, 40 miles west of Edmonton. The gas will fire two boilers with a potential of 175,000 lbs. of steam an hour that will generate power for the mill and supply electricity for the community.

The Alberta government has leased to the company 3,000 square miles in the densely timbered area at a stumpage rate of $1 a cord, and the company has been granted reserve rights on an additional 3,000 square miles.

According to Jim Clark, assistant chief forester for the company, probably 60% of the area contains lodgepole pine, the balance being mostly white spruce. Present plans call for cutting on 14,000 acres a year.

More than 1,000 men are working in the woods cutting pulpwood in anticipation of production's start. More than 7,000 cords of wood have already been collected near the mill, and it is expected that the stockpile will consist of 235,000 cords by February.

Cutting is on a section basis as part of a conservation program. Power saws move through one stand 300 yards wide, then by-pass a section before cutting a third. The alternate sections left standing are expected to re-seed naturally the cut-over areas and start a new crop of trees.

New Tissue Mill and Converting Plant at Scott's Mobile Installation

The L-shaped building, right center, is converting plant, building next to it is room which will house two Beloit 208-in. machines, each equipped with 12-ft. Yankee dryers. New machine rooms can be added, coming toward left side of picture. At lower left, new office building nears completion.

Preview of Scott's New Tissue Mill

Cornerstone puts official touch on H&W mill; Scott readies first mill in South to make its products

—Mobile, Ala.

● Much significance can be attributed to the laying of the cornerstone here on Dec. 6 for the new $20 million tissue mill at Scott Paper Co.'s Hollingsworth & Whitney Division. Perhaps the most important aspect of this new mill is that it marks Scott's actual entry with its special products into the ranks of those who are already producing and converting paper and paper products in the ever-growing South.

This mill, one of the pioneer tissue mills in the South, will be the first to produce Scott trademarked products in Dixie. (Its other Southern mill, Brunswick Pulp & Paper Co., which it owns jointly with Mead, produces only pulp.) It is significant, too, that the Mobile installation will also become a chief distribution center for Scott products in the South. Tying in with this, Scott has appointed its first regional sales manager in Atlanta and is moving William H. King, chief consumer's representative at the Marinette Paper Co. (a wholly-owned subsidiary of Scott) to Mobile. This new mill also adds to Mobile's stature as a paper town.

Within sight of the Scott mill is International Paper's Southern Kraft Division headquarters and its new newsprint and kraft mill, now in operation. It is also significant to the town of Mobile, where it will create 250 new jobs and the payrolls and purchasing power that go with them.

The mill is well along toward completion, should be in production by mid-summer 1957. It will increase capacity at the former Hollingsworth & Whitney mill, which was merged into the Scott family in 1954, by about 120 tons a day, boosting capacity here to 540 tons of sulfate a day, 375 tons of which is bleached. At present, the Mobile mill makes only two grades for stock, merchant tag and index. Other bleached and unbleached sulfate grades are made to customer specification. The older mill, which started up in 1940, is backed up by 200,000 acres of woodlands which supply in part its daily appetite for 800 cords of pine pulpwood. Last year, the 1200 employes here earned a shade under $6 million.

Plenty of Room to Grow . . .

To build the new mill here, Scott virtually created a site, pumping sand from the bottom of the nearby Mobile river into a swampy bottomland. The new mill is located north of the

existing facilities in such a way that new machine rooms can be added toward the older mill so that they will eventually be joined. In this manner, it will be possible for Scott to put in some 12 machines at this site. With the two new Beloit tissue machines, they will have six in operation by summertime. (No. 3 is a pulp dryer, No. 1 produces unbleached grades and Nos. 2 and 4 are mostly on bleached grades.)

The two new machines will have 208 in. wires and 12 ft. Yankee dryers. No. 5 will also be equipped with a Beloit calender rewinder. They will be backed up by two Morden Slush-Makers, storage chests, nine Nash vacuum pumps, wet and dry broke chests, five Shartle Selectifiers, Jones Hi-Lo dry end broke pulper, two savealls and other auxiliary equipment.

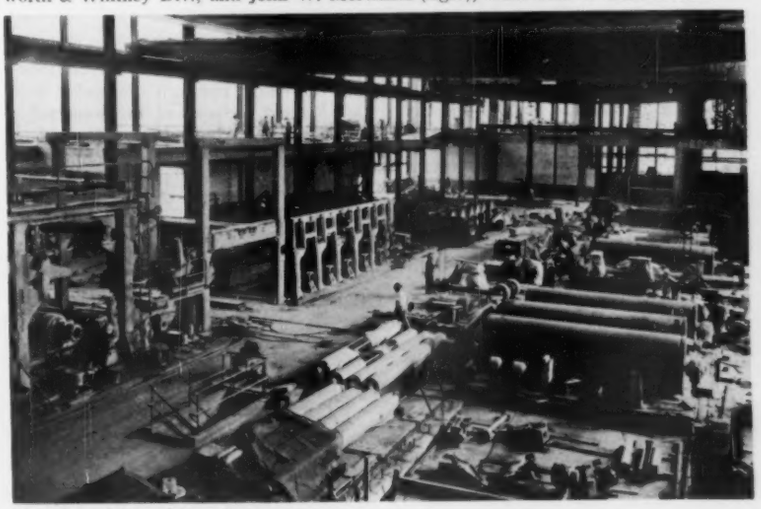
H&W also Expanded . . .

Existing facilities at the mill have also been expanded to make way for the new increase in capacity. Additional space for gum has been made available in the woodyard and a new log conveyor and two barking drums have been added. Two new digesters and additional washing and screening facilities have also been included in the addition. (Gum pulp will be bleached in the present bleach plant.) Other additions: a 300-ton Babcock & Wilcox recovery plant, Research Cottrell precipitator, expanded evaporator and causticizing equipment, a new gum slushing system and storage space for gum pulp at the tissue mill.

This new mill will be No. 15 for Scott, quite a step for a company which was started in 1879 by Charles and Irvin Scott on $300 cash and a $2,000 loan. The first of its now famous trade names, "Waldorf," was introduced in 1900 and by 1920 the business had grown to almost $2¾ million. Its net income after taxes in 1955: $21,336,139. Scott's trade named toilet tissues and paper towels are known the world over but it's rather interesting to note that "Scottowels" were first produced by accident. In 1906, the Scott mill in Philadelphia received a carload of paper which was too thick to use for toilet tissue. At that time a Philadelphia school teacher, plagued by an epidemic of colds among her students, was using paper cut into squares for towels in the washroom to prevent infections from spreading. When Arthur Scott, then president of the company, heard about her plight, he had the extra carload of paper made into individual sheets, 13 by 18 in. in size and the idea caught on. That's how the tissue towel was born.

T. B. McCabe Introduced
Scott's president, Thomas B. McCabe, is here being introduced to cornerstone audience by John W. McNichol, exec. asst. to Vice Pres. Dennis Cousins. At right, Scott Vice Pres. Harrison Dunning from Chester, Pa.

Top Men at Mobile Mill
James L. Madden (left), vice pres. and director of Scott, and pres. of Hollingsworth & Whitney before Scott merger; Joseph W. Shimp (middle), plant mgr. at Hollingsworth & Whitney Div.; and John W. McNichol (right), exec. asst. to Mr. Madden.



Inside of Machine Room
Work is progressing on two high-speed tissue machines. They will be operating by summer, turning out 140 tons a day of pulp which will be converted into Scott products for first time in South.

Giant Carrier Loads Noodle Pulp from British Columbia's Newest Pulp Mill

In foreground is 14,500-ton steel pulp carrier specially built to carry noodle pulp from Elk Falls Co.'s new kraft newsprint mill at Duncan Bay, B.C. (shown in background) to Antioch, Calif. Woodroom is at far right; chip storage at its left. New pulp mill building and original newsprint mill built in 1952 are left, center.

SPECIAL PULP & PAPER FIELD REPORT

New Technique for Shipping Pulp

Specially designed tank ship solves problem in industrial logistics, transports pulp 1,100 miles

Duncan Bay, B.C.

● A long-heralded new way of shipping pulp, in nodular form, in the holds of a 14,500 ton tank, especially built for the purpose, is now in regular operation.

Duncan Bay, Vancouver Island, one of the Pacific Northwest's great centers of integrated wood utilization, is where the journey of 1,100 miles starts. Here an Elk Falls Co. addition, a 400-ton sulfate pulp mill, has been completed at a cost of $15,000,000, primarily to provide this "noodle" pulp. It is pumped off the ship at the "New Camas of the West"—the Antioch, Calif., Crown Zellerbach kraft paper mill.

The new mill represents the initial phase of a $29,000,000 expansion program by this division of Crown Zellerbach Canada, Ltd. Second phase will be establishment of a second combination kraft and news machine to augment the production of the 320-ton newsprint mill started up in the summer of 1952. The new newsprint unit will have a capacity of 175 tons daily; the pulp mill now in operation, when fully complete will produce 500 tons of sulfate pulp. Of this, 400 tons is earmarked for the new mill at Antioch.

The technique adopted for shipping this pulp from the forest here to the paper mill and its fast growing California market represents a unique operation. A problem of industrial logistics was involved—how to transport pulp to the point of ultimate use most economically. Rail transportation would have been too costly; ordinary deepsea cargo ships were not equipped to carry such material satisfactorily. As pointed out in PULP & PAPER last year, Crown Zellerbach experts worked on several alternative proposals, borrowing ideas here and there.

Probably the best ideas resulted from a study of bulk sugar handling from Hawaii to the San Francisco Bay area. Eventually theories, experiments and practical tests culminated in the building in Japan of a 587-ft. long steel carrier designed specifically for the Duncan Bay-Antioch operation by Duncan Bay Tank Ships, Ltd., subsidiary of National Bulk Carriers of New York, which has the contract for transporting the pulp.

Another feature of the new Elk Falls mill is the degree to which automation has been applied through mechanical efficiency in all major production departments and effective installation and functioning of conveyor systems. The vast network of conveyors, ranging all the way from water flume for the groundwood-news mill to enclosed rubber belt and blower pipes, is one of the first and

most arresting impressions gathered by a visitor. Smooth functioning of these conveyors makes Elk Falls a masterpiece of materials handling.

From a Kamyr press at 35% air dry status, the kraft pulp passes through a Dorr-Oliver shredded for shipment via the tanker. It is conveyed to outside storage where an extensive area, capable of storing 8,000 tons, has been asphalt surfaced.

Jeffrey belt conveyors serve the operation from the brown stock washer building to a Stephens-Adamson traveling stacker. The conveyor consists of a 900-ft. rubber belt pickup system with trippers, and 500 tons can be handled daily by the long-necked traveling pulp stacker, which operates on rails parallel to the pile a distance of 550 ft. The pulp is stacked according to species—hemlock or fir. Along an elevated concrete apron, two Caterpillar D8 tractors with special blades are employed to bulldoze the "noodle" pulp into hoppers. The hoppers are operated on standard gauge track and discharge into a 72 in. belt conveyor which carries its load to the dock and waiting pulp carrier. This conveyor is equipped with Jeffrey belt sprockets and pulleys. From the far end of the storage pile to the dockside the distance is 1800 ft., mostly enclosed—an impressive instance of how conveyor systems have provided the key to economical and flexible operation.

How Pulp Carrier is Loaded . . .

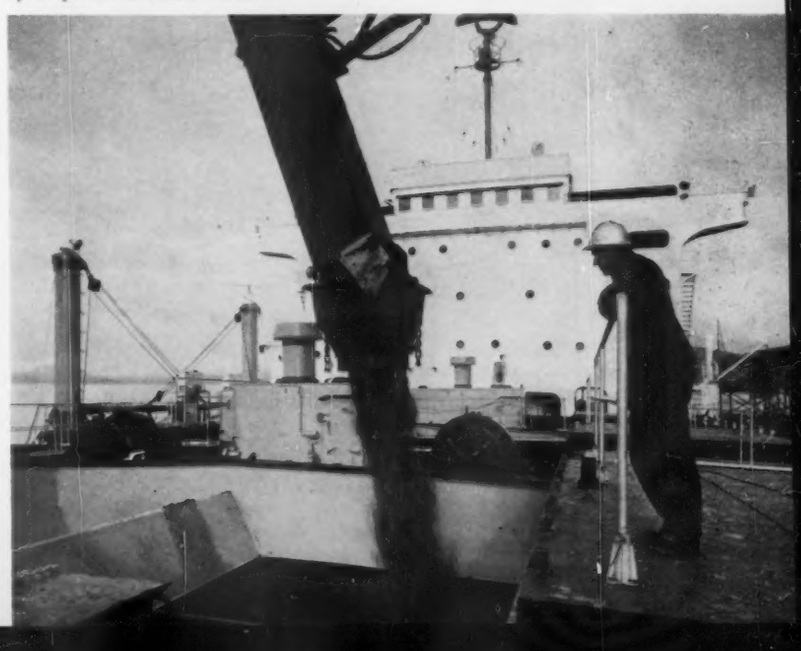
Loading of the 14,500-ton carrier, named Duncan Bay, represents one of the outstanding phases of the Elk Falls Co. operation. This method of long-distance handling bulk pulp in wet noodle form is a new concept in the industry. The tanker has cargo capacity of about 800,000 cu. ft. Ordinarily, pulp exported to the U.S. from Canada is shipped in dry or baled form. It must then be reconverted to wet pulp at paper mills of U.S. customers. There are two exceptions to this, both of them in Eastern Canada—at International Falls, Minn., and Madawaska, Me.—where wet pulp is piped a short distance across the border to nearby U.S. mills.

By shipping Elk Falls kraft in wet form, loss of strength resulting from intermediate drying processes is avoided. The pulp is loaded into the ship's nine separate holds, according to species. The noodle pulp is conveyed by a 72 in. Goodyear belt onto a traveling Stephens-Adamson stacker running on rails the full length of the ship. The stacker is equipped with a movable boom which can be positioned to any one of the ship's nine

New Concept in Pulp Transportation
Specially-designed 14,500-ton tank ship leaves Elk Falls Co. with cargo for CZ mill at Antioch. On dock is boom which can be moved on rails full length of ship so as to feed into any one of carrier's nine holds.

Long Conveyor Carries Pulp
Section of 1800 feet of conveyor operated from far end of storage pile to dockside. Goodyear belt on which pulp is carried to Stephens-Adamson stacker is 72 in. wide.

Loading Pulp Through a Spout
Noodle pulp is fed into one of carrier's nine holds by this swiveled spout controlled by Stephens-Adamson trimmer.

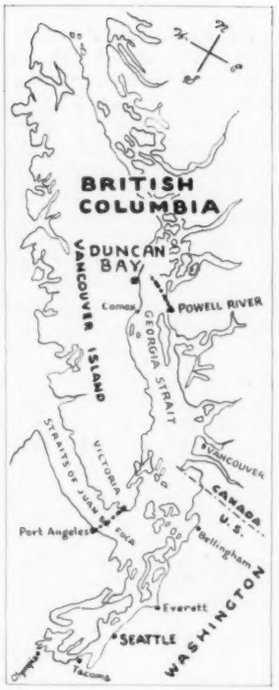


holds. The boom can move on its own power or be shifted back and forth by fork lift truck. The pulp travels along the boom and into the ship, the flow being controlled by Stephens-Adamson trimmer with a swiveled spout, with motor-driven distributor which can be lowered into the hold to effect even loading.

Allowing for berthing time and other related activities, it is expected that the carrier will be at the mill about a day on each call. Actual loading time is expected to take about 16 hours. In the event the ship is delayed, the pulp, by-passing the shredder, can be shipped in bales.

A methodical ten-day cycle is expected to be consistently carried out by the tanker in the round trip to Antioch and back. Though only one day is required for loading, three days are allowed for unloading, with travel of three days each way.

There is an extensive system of pumps, agitators and piping aboard ship, and flexible hose connections to dock, required for the pumping-unloading operation at Antioch. The pulp is slushed on board the ship after arrival at Antioch and reduced to about 2% consistency. On the Antioch dock the pulp is dewatered over big stainless steel deckers and here again is a storage layout resembling Elk Falls and extensive conveying systems. Here also is a huge outdoor concrete slab, 1,000 ft. long, 170 ft. wide from top of lips, where different species of pulp can be separately piled. Also, at Antioch a specially built Stephens-Adamson Stacker with a boom extending out 110 ft. and standard ship's trimmer is used. When pulp is reclaimed, bulldozers are used here, also, pushing pulp over the lip of the slab onto a reclaiming belt conveyor, paralleling the stacker conveyor, both about 1,000 ft. long and paralleling the storage slab. The reclaiming conveyor feeds by gravity onto another 800-ft. long conveyor, in diagonal direction to the Antioch mill's high density storage tanks.



Map shows location of Duncan Bay in relation to other Pacific Northwest centers.

Other Innovations at Elk Falls

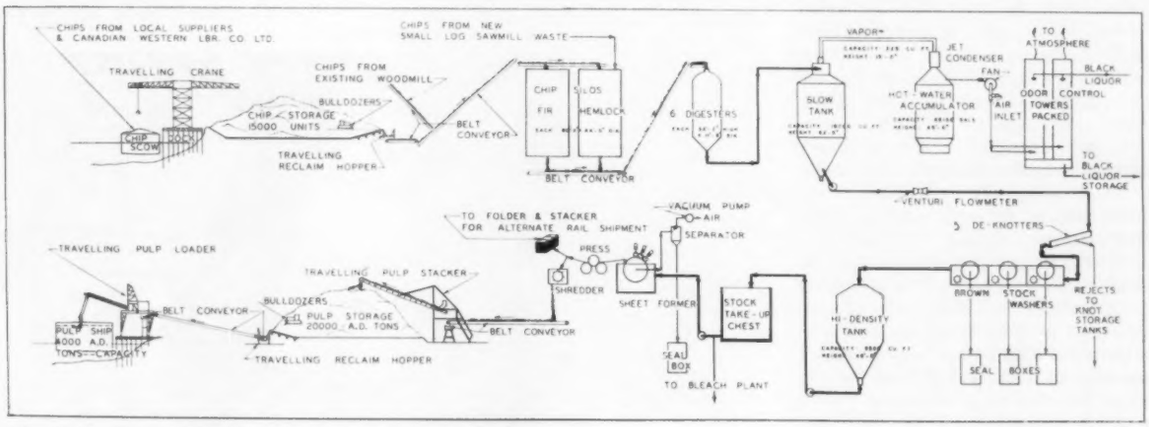
- ✓ Chips from Many Sources
- ✓ Ten Chippers to Serve It
- ✓ Four Types of Digesters
- ✓ New Towers for Oxidation

Duncan Bay, B.C.

• For Elk Falls Co.'s new kraft mill about 29,000 units of wood chips are required monthly and some 25 small sawmills on Vancouver Island and the lower mainland of British Columbia contribute. Last year more than 1,200,000 units of chips were produced in British Columbia from logs unsuitable for lumber and from other waste wood—equivalent to about 450,000,000 bd. ft. of timber which would otherwise have served only as hog fuel, firewood or some other less economic use, perhaps even destroyed in mill refuse burners. At the Elk Falls mill site, a mountain of about 29,000 units (200 cu. ft. to a unit)—equal to about one month's supply—is stockpiled to insure continuous operation of the kraft mill. Two chip barges per day are unloaded on a round-the-clock basis, seven days a week. And these bargeloads of chips are only a part of the mill's supply.

When the new sulfate mill is in full production, 400 tons of the unbleached pulp will continue to be allocated daily for export to Antioch, and an additional 100 tons of the pulp will be used at Duncan Bay for the manufacture of newsprint or bleached and unbleached kraft on the No. 2 machine now being installed, with a view to operation by midsummer.

A major supplier of wood is Crown Zellerbach's Canadian Western Lumber Co., which operates one of the largest sawmills and plywood plants



Flow Diagram of Elk Falls Co. at Duncan Bay

in Canada at Fraser Mills, on the Fraser River near New Westminster, B.C. This mill is being extensively modernized with additional barking and chipping facilities.

Chips from other mills and from large quantities of pulpwood supplied by independent loggers and from small farmer woodlots on Vancouver Island and adjacent islands also reach Elk Falls. Eventually, the company will draw wood from its forest management license, the second to be awarded by the British Columbia government and embracing much second growth timber on Vancouver Island, other nearby islands and the mainland. Under the agreement, most of this timber will not be available until 1974.

Facilities at Duncan Bay will enable the company to make use of practically all species of wood, but hemlock and fir will predominate. Provision has been made for efficient log sorting and storage in tidewater at the mill site, the logs being segregated by species, quality, size and other characteristics.

Chips delivered by barge or scow are unloaded by a Colby crane with clamshell bucket capable of handling 50 units per hour. Chips are held in storage pile or dropped into a hopper which feeds into a belt discharging by Jeffrey trippers into two silos each of 400 units capacity. The chips may be reclaimed from storage pile by the same crane, operating from a fixed gantry.

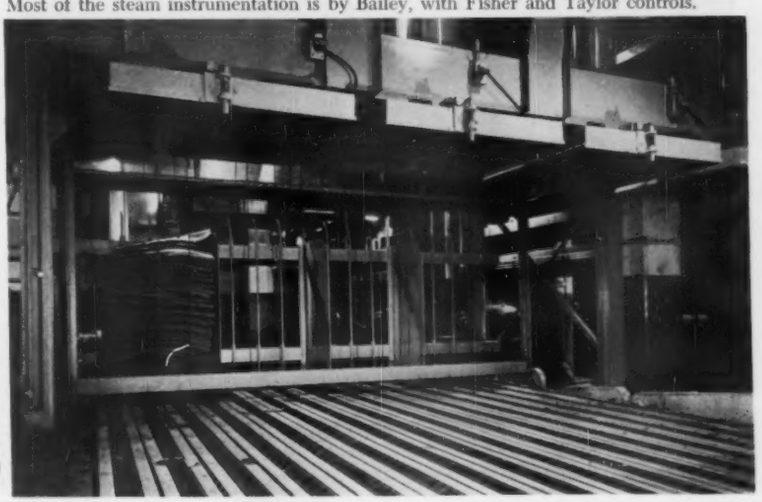
New Sawmill Strictly Modern . . .

For emergency purposes chips may be produced at the company's existing wood mill built at the time the No. 1 newsprint machine was installed. Here logs are fed into a new 112-in. 6-knife Sumner chipper. During off shift, logs can be barked by a Simons hydraulic barker and diverted from there to the chipper, which will supplement the discharge from the chipper on the same belt leading to the silos. The main job of the wood mill, however, continues to be the supply of wood blocks by flume to the grinders operated in conjunction with the newsprint mill.

Another source of chips is from the new, highly mechanized sawmill—a model of its type—which will be completed this winter. In this mill there are two Esterer 28 x 30 gang saws operating in tandem and a 20 x 22 Esterer live gang. A separate haul brings logs to a Nicholson-Murdie mechanical barker and after being cut to required sawmill length the ends are fed to a 78 in. 3-knife Sumner chipper. Usable saw logs are run through Sumner edgers, and the edg-

In the Digester Building
The Elk Falls Co.'s kraft mill is equipped with six 12-ton stationary digesters and they will be augmented by two more.

Elk Falls Instrumentation
Here is a Bailey control panel for the first stage of the three-stage Oliver washers. Most of the steam instrumentation is by Bailey, with Fisher and Taylor controls.



Some Pulp Goes into Sheets
Elk Falls' output that isn't shredded and stored for shipment south can go to this Lamp-Grays Harbor folder and stacker.

ings passed through two 48-in. Hansel horizontal chippers, the resulting product being combined with that from the Sumner chippers and blown directly to the storage silos by the Conveyair system.

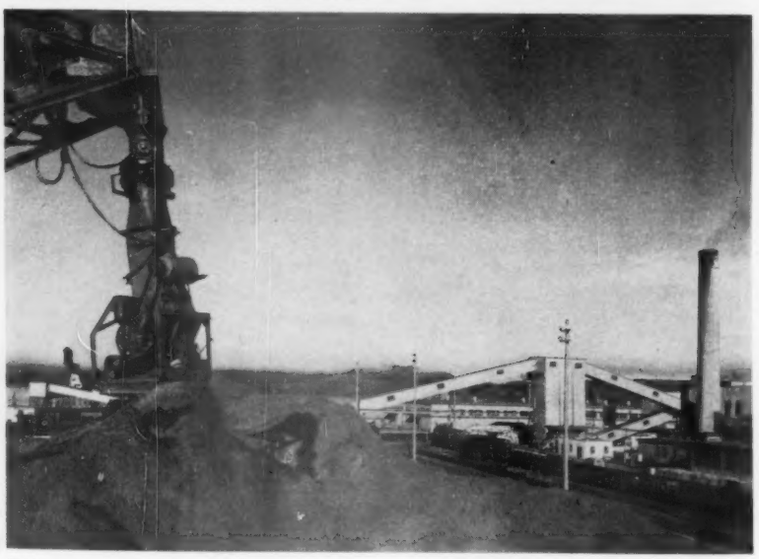
Pneumatic Systems . . .

The company uses three different blowing systems at various places in the over-all operation—Conveyair, Rader and Fuller. The Conveyair system blows chips a distance of 1200 ft. by pipe. The Rader Pneumatic & Engineering system sends hog fuel from the barkers in the sawmill 500 ft. to the storage pile. The Fuller Co. equipment handles salt cake from rail cars to the dissolving tanks. Altogether, there is approximately a mile of chip conveyor at Duncan Bay, 3400 ft. of pulp conveyor, in addition to hog fuel conveyor and 1200 ft. of existing conveyor originally installed for the newsprint mill. The amount of conveyor and blower footage in use has an important bearing on the large volume of material that can be handled in minimum time with economy in manpower.

A part of the new sawmill's equipment is a Stetson-Ross planer, and finished lumber will be shipped from the new lumber dock. The sawmill's capacity will be 100,000 bd. ft. of lumber per shift, most of it processed from relatively small Douglas fir logs. Eventually facilities will be provided for diverting better-grade logs from the existing woodroom to the sawmill so that they can be converted into lumber rather than pulp chips.

Noodle Pulp for Storage

Pulp from the Oliver shredder that is intended for shipment to Antioch is conveyed outside the mill and dropped into piles by this traveling stacker (left background). In right foreground tractors are bulldozing pulp into hoppers operating on rails which discharge onto the belt serving the dock.



Trimming a Pile of Noodle Pulp

Stephens-Adamson trimmer is shown here discharging noodle pulp for one of storage piles. The trimmer, or spreader, is attached to a Jeffrey conveyor, shown at top.

Ten Chippers Serve Mill . . .

Few companies will have so much chipping capacity. By the time present expansion is complete there will be ten chippers in operation. Two new chippers are being installed at Canadian Western, where four are already in use, and four chippers will be at Elk Falls Co. These various units include Sumner incline feed and horizontal chippers, a Carthage Norman chipper, two horizontal Hansel chippers handling edgings, a horizontal Hansel chipper at Canadian Western and Sumner chipper for log ends.

Two 440-unit chip silos, one for fir and the other for hemlock, built by B. C. Bridge & Dredging Co., are of concrete with steel cones and served at the bottom by Link-Belt feeders which feed direct to the digester building over 36-in. Goodyear rubber belt conveyors, with trippers running the length of the digester building. Chain Belt trippers are used here and Chain Belt equipment is also in the digester building and hog fuel system.

Test Digester for Corrosion Resistance . . .

In the digester building there are six 12-ton stationary digesters and two more will be added. Four of them are built of 2-in. thick mild steel walls (grade A 285 steel) by Dominion Bridge Co. Another is a stainless steel Smith-lined digester built by A. O. Smith Corp., and the sixth is an Inconel-clad digester built by Dominion Bridge. Two more of mild steel will be added.

The reason for the variation is to give the company an opportunity to test corrosion effects. Each digester is of 5,000 cu. ft. capacity, 12½ ft. in diameter and 55 ft. high. They are equipped with standard Foster-Wheeler circulating heating systems, with 1000 sq. ft. of heating tube surface. Capacity is 12 tons of air dry chips, producing a total of 72 tons a day per digester. Four of the Dominion digesters have dimensions of 11 ft. 6 in. diameter by 45 ft. carbon steel, and another Dominion is 11 ft. 6 in. by 54 ft., this being the Inconel-clad unit. The A. O. Smith digester's dimensions are 11 ft. 6 in. by 54 ft. and the two additional digesters will

be of the same size, with Foster-Wheeler heating systems. Operating in connection with the digesters are Bingham 8x10x16½ centrifugal circulating pumps. Most of steam instrumentation is by Bailey Meter Co. The digesters are equipped with Esco neck strainers. Throughout the new mill the stock, liquor and water pumps are virtually all Allis-Chalmers.

Pulp Mill Odors Reduced . . .

In the blow heat recovery system Ross & Howard provided the jet condenser and hot water accumulator and blow tanks.

Black liquor oxidation towers were built in collaboration with the British Columbia Research Council, which has carried out extensive experiments aimed at reduction of pulp mill odors. Facilities built to the council's design have been functioning effectively at two other pulp mills on Vancouver Island. In general principle, the process consists of oxidizing the blow heat vapor, by mixing it with air and forcing it down the tower in contact with black liquor in the absorption tower, the effect being to condense the gas and dissolve it in the black liquor, recirculating it to the recovery system and burning it.

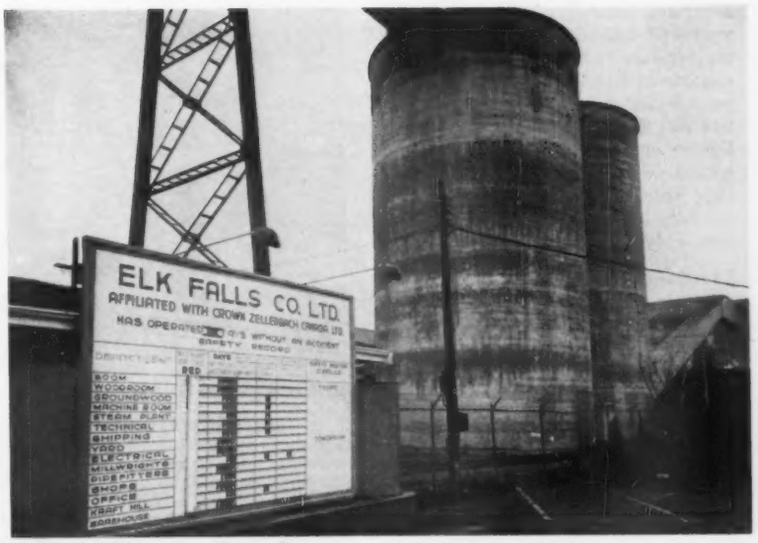
Crown Zellerbach Canada spent about $100,000 to install this odor control system.

"Every possible step has been taken to make the new mill as fume-free as modern design will allow," says Resident Manager Tom Hargreaves, who noted that the height of the mill's red-striped stack was increased by 100 ft. from the original plan to 350 ft. in a further move to disperse offensive odors as widely as possible. The representatives of the B.C. Research Council chiefly responsible for the installation were Dr. R. H. Wright, head of the chemistry division, and R. W. Klinck, head of the council's engineering division.

Pulp Washing and Preparation . . .

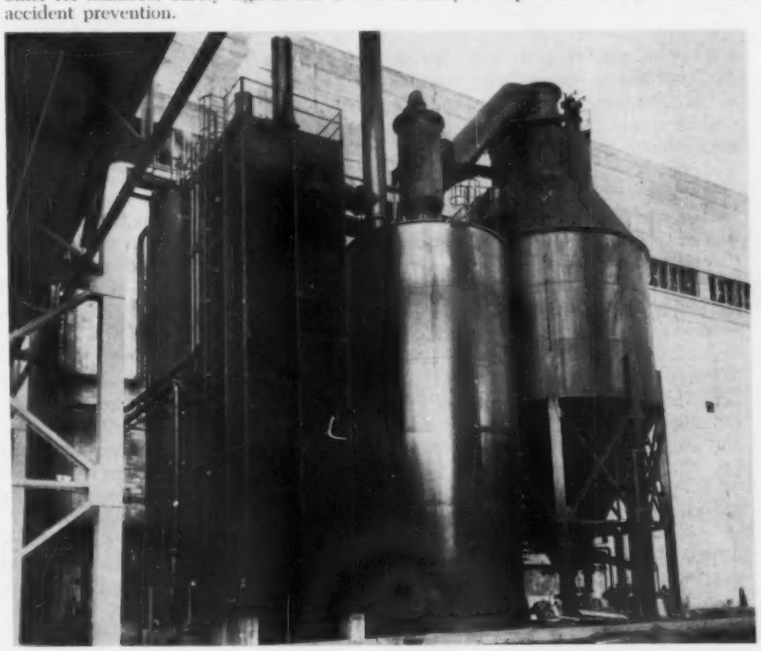
Jonsson (Bird) knotters are employed in brown stock washing, the knots being dropped into a tank, dissolved and pumped back into digesters being fed with cooking liquor into the bottoms. The stock flows into three 11 ft. 6 in. by 20 ft. brown stock washers built by Oliver (E. Long Co. in Canada) with Ross hoods, and dropped into a high density tank equipped with Sherbrooke (Impco) high density mining nozzles and agitators. From there it can go either to the bleach plant or to the rest of the system depending on requirements.

The main flow of stock moves to the Sherbrooke wet press or heavy duty decker, 11 ft. 6 in. by 6 ft. where it is dried to about 28%, then to a Kamyr press installed by Paper Machinery Ltd., whence it emerges about 35% air dry. The pulp is then passed either to a Dorr-Oliver shredder for shipment via tanker or lapped and folded for rail shipment if desired. Sheet pulp can go direct to a Lamb-Grays Harbor folder and stacker, made into 4 ft. by 4 ft. bundles and made available for market pulp or for auxiliary use at the Elk Falls mill. Storage has been provided for 20,000 air dry tons.



Where Chips are Stored

These concrete silos with steel cones, served at the bottom by Link-Belt feeders using Goodyear belt conveyors, each have a capacity of 400 units. One silo is for fir chips, the other for hemlock. Safety sign at left is one of many examples of Elk Falls' stress on accident prevention.



Battery of Tanks

Most of these steel tanks at Duncan Bay were built by Western Bridge & Steel Fabricators. Left to right: liquor measuring tank for digesters, square oxidation system towers designed by B.C. Research Council to combat mill odors, water accumulator, blow tank with jet condenser at its top.

Recovery . . .

Here are a few details concerning other sections of the mill: The recovery building is served by a Babcock & Wilcox two-drum Sterling boiler equipped with special cyclone

separator instead of the more conventional cascade type. Total steam temperature is 675° F. The boiler is capable of handling 415 tons of kraft pulp liquor daily and produces about 216,000 lbs. of steam per hour. Black liquor evaporation is accomplished with a six-body sextuple-effect Lundberg-Ahlen system. A Koppers electrostatic percipitator will have 175 tons daily capacity.

Fourdrinier Machine . . .

Beloit Iron Works is building a machine somewhat similar to that installed at Crown Zellerbach's Antioch mill which will also operate on Elk Falls sulfate pulp. The Antioch 265 in. Beloit Fourdrinier machine has five dryer sections for kraft paper and board, the Elk Falls machine three. It will be 26 0inches wide.

Equipped with two calender stacks, the Elk Falls machine will have a Beloit reel and winder, the speed of the latter being 5500 fpm. A totally inclosed Ross hood with Ross-Grewin system will be installed, and Ross Engineering Co. is also supplying the felt hot air system, as well as the Ross Midwest-Fulton condensate system.

The finishing end of the machine will be served by Lamb-Grays Harbor equipment, including roll wrapper and weighing apparatus.

Engineering of the kraft mill was by Howard Simons, Ltd., in collaboration with Crown Zellerbach Canada's central engineering department. General contractor was British Columbia Bridge & Dredging Co.

Structural steel was supplied and erected by Dominion Bridge Co. and Western Bridge & Steel Fabricators, docks and wharves by Vancouver Pile Driving & Contracting Co., sprinkler and fire protection system by Grinnell Co.

Big Fish—Big Timber . . .

The name of this company is derived from one of the scenic cataracts in the famous Campbell River system. Campbell River for years has been known the world over as a sportsman's playground and spawner of the giant Tyee salmon, ranging from 25 to 60 lbs, or more. This country is also a land of big timber, and for many years loggers have been active there. This abundance of forest, most of it ideal for pulp manufacture, coupled with adequate water and power supplies from Campbell River, where the British Columbia Power Commission has one of its largest hydro installations, has created a combination hard to beat for the location of a modern pulp and paper operation.

There had been talk of a pulp mill in the Campbell River district for a quarter century before Elk Falls Co. was brought into existence, representing a partnership of Canadian Western Lumber Co. and Crown Zellerbach interests. All corporate interests involved in the undertaking were merged in Crown Zellerbach Canada, Ltd., with Frank N. Youngman as chairman of the board and Peter T. Sinclair, president. Crown Zellerbach now has a stake in British Columbia industry roughly appraised at $150,000,000.

A new townsite, with all facilities required for comfortable living, was one of the first objects of attention by Elk Falls Co., and its development was concurrent with construction of the mill.

It has been the aim of Crown Zellerbach and Elk Falls Co. to create at Duncan Bay, where there is room for almost unlimited expansion, a large and fully integrated industry dedicated to maximum utilization of the forest resource. The completed expansion will provide for the best end-use of sawlogs, pulp logs and sawmill waste all at one mill site. The mills as they exist today and as they will gradually grow provide more complete use of what were formerly regarded as logging sawmill and plywood plant waste and this trend, which has been called "the revolution in chips," has contributed immeasurably to the growth of British Columbia's forest economy. Utilization of chips at mills such as Elk Falls Co.'s has not only sustained the province's pulp industry; it has in many cases represented the difference between profit and loss to many of the area's smaller sawmills.

In Charge At Duncan Bay

T. B. (TOMMY) HARGREAVES is resident manager of Elk Falls Co.'s pulp and newsprint mills. English-born, he has had 35 years in the industry, starting with Washington Pulp & Paper Co. at Port Angeles, Wash., now a part of the CZ organization. He supervised construction of the Duncan Bay mills.

Operating Personnel at the Elk Falls Co.

T. B. HARGREAVES, resident manager; E. C. COOLEY, assistant resident manager; J. W. HILL, assistant to the manager.

I. CHRISTIANSEN, resident engineer; C. J. HAGUE, industrial relations supervisor; W. R. SAWYER, office manager; R. D. BOWEN, boom supervisor; F. H. CAMP, master mechanic; J. W. CLARKE, machine shop supervisor; T. A. EMBLEY, millwright foreman.

H. C. GRAHAM, technical supervisor and assistant to the paper machine supervisor; C. R. HULME, yard supervisor; A. LOGAN, groundwood supervisor: J. L. MARSHALL; chief electrician: G. T. F. ROFE, millstore supervisor.

S. JEMSON, steam plant supervisor; J. TALBOT, warehouse and shipping supervisor; H. G. THOMPSON, pipe shop supervisor; H. A. WEBSTER, woodmill supervisor; P. M. WILKIE, kraft mill supervisor; J. YOUDEN, machine room supervisor.

J. YOUDEN

H. C. GRAHAM

J. L. MARSHALL

S. JEMSON

C. L. HAGUE

P. M. WILKIE

Some Observations from France

By ROBERT D. EDWARDS

● Before my trip to France, PULP & PAPER was kind enough to send letters, in my behalf, to several leaders of the French paper industry and others. As usual, when one travels on business, appointments are made in advance with persons or companies one wishes to see. Upon arrival at a hotel, the usual phone calls are completed and arrangements for interviews agreed upon. Such was the case on this recent trip to Paris. Letters had been exchanged and dates clarified.

Then came the inevitable hotel phone call for confirmation. However, we did not stop to consider the language barrier, and once our business associate was on the other end of the telephone, we found it difficult to converse. However, a meeting was arranged at our hotel, and shortly thereafter our friend arrived, briefcase in hand, for an informative though slightly confusing discussion. With a Berlitz book of simplified language and our own slight knowledge, a hangover from school days, we discovered many interesting facts about the paper industry in France.

During 1955, France made more pulp and paper than ever. In paper, France almost hit the two million short tons mark (1,972,850 tons), making her the 7th leading papermaking nation in the world. There is a tremendous effort being made towards the modernization of paper mills in France, in order to enable French producers to be in a better position to match price and quality offered by non-French competition. Our friend brought along several publications which we exchanged with some of ours, both of us, I am sure, benefitted and gained increasing knowledge of trends and operations of an industry making tremendous strides in two different countries of the world.

Our next contact proved a bit easier; a gentleman, well known in the field and one who had acquired a most profound knowledge of our language. His hospitality was most gracious. We learned that their goals in industry are as intense as ours, yet their approach is on a much more even keel and much less harrassed. Their day begins quite early but a sandwich and coffee lunch is quite out of the question. We were asked to lunch and told it would be a rather hurried affair as the day held many appointments. We found that "hurried" meant two hours instead of three, and compared to our standards was extremely leisurely.

We were anxious to learn more about the working class of France, their ideals, aims and what constituted a happy life. In spite of all their misfortunes, the French have kept a stubborn faith in their way of life, the nation that invented "joie de vivre" has never lost its hold on happiness. Without most of our modern conveniences, the French household is well run.

These Luxuries—So Far Out of Reach for French Labor

A Market For More Paper . . .

Here is a land where supermarkets and household appliances are only beginning to make a timid appearance, where husbands refuse to eat out of cans and where schools still believe in homework. It is a familiar sight in the streets of Paris to see the breadwinner of the family off to the job with his loaf of bread under his arm and his bottle of wine, walking to work.

Industrial conditions as we know them in this country don't exist over there, and the many everyday conveniences we have in factories and offices, if singled out, would to the French worker be heaven-sent luxuries. The following facts may be of interest:

Although most French workers would like to live in an individual house instead of an apartment, few of them ever expect to do so. About 69% of French workers would like someday to have a bathroom, but more than half of them believe that this wish will never be fulfilled. Some 53% want a refrigerator, but half of them consider it beyond their reach; the proportions are about the same for a washing machine. Some 60% would like to have a car, but two-thirds of them think this dream will not come true.

On the whole, French workers have little fear of unemployment. It is an active worry for only 11% of them, mainly in industries where unemployment is already a threat. Most employes have a good opinion of their employer's competence and consider their relationship with management relatively good. French workers show little interest in labor movements in other countries and a great majority of them say the United States is the place where workers are best off.

It is most interesting to note that although France has formed an internationally recognized labor force of skilled industrial workers, it is a rare event to find a French worker who has lost touch with the soil and his peasant origin. Growing vegetables offers not only a welcome change from smoke and machinery, but also supplements tight budgets. It is also interesting to note that a three weeks paid vacation has just become obligatory in France under the terms of a new law and workers can take this holiday all at one time.

We inspected several business concerns where the clerical help were busy adding figures by the hundreds without the aid of our mechanical business machines. When we inquired as to their methods, they were amazed that we should consider an adding machine standard office equipment.

The author is president of Holley-Edwards Sales, Inc., Jacksonville, Fla., firm which supplies pulp and paper mills in Southern U.S.A. His father, Albert Edwards, recently retired as vice president of National Container Corp., recently merged with Owens-Illinois Glass Co.

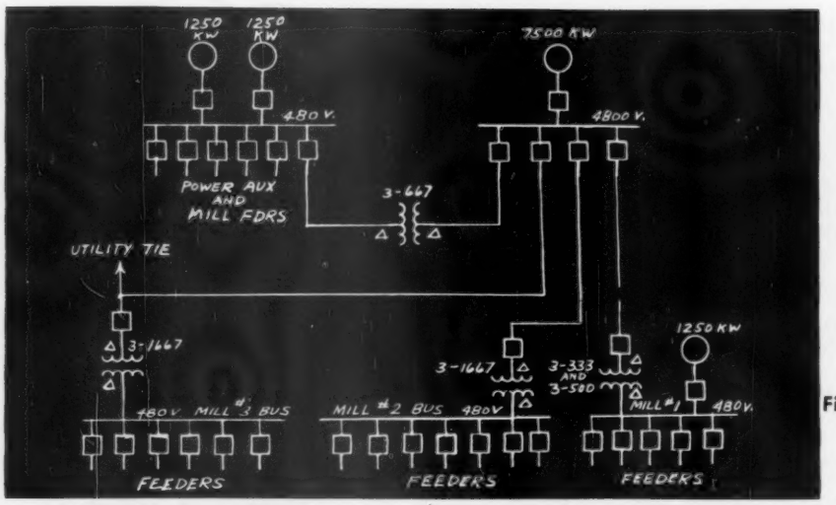
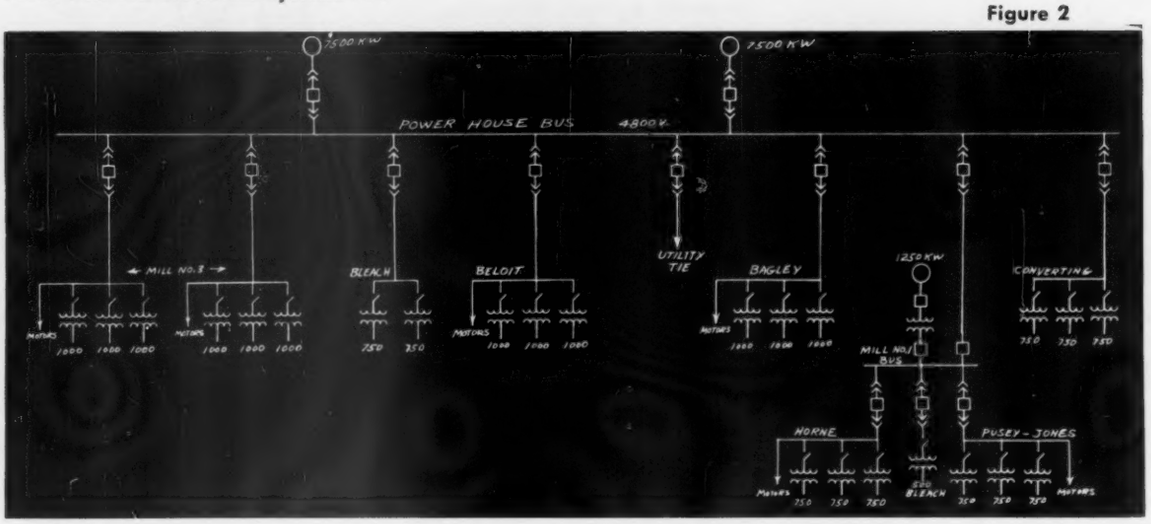


Figure 1

From this old electrical system . . .

Figure 2



KVP modernized to this system, without once stopping paper machines

How to Modernize an Electrical System

—and Keep the Mill Running

By RAY CHERMAK and **DAVE GEARHART**

Former Asst. Chief Engineer, The KVP Co. Parchment, Mich.

Head of Industry Sales, General Electric Co. Kalamazoo, Mich.

● In the June, 1955 issue of PULP & PAPER, an article by M. J. Osborne (electrical supt., Bowaters Southern Paper Corp.) carried this title: "To Be in on Design of New Mill is Paper Man's Dream." We might add that this is also the dream of most electrical engineers in the pulp and paper industry, who at one time or another must face the problem of how to expand and modernize the electrical systems of their existing plants without interrupting production.

Though this is a genuine problem, it is not an insurmountable one, as The KVP Co. of Kalamazoo proved. This firm, specializing in the manufacture of food protection papers, rebuilt its electrical distribution system over a five-year period through a planned step-by-step program— without once having to halt its six paper machines.

Through the years, KVP's electrical system had become inadequate from

the standpoint of interrupting capability, flexibility, and capacity to handle the load. The system consisted of large, low voltage feeders which were being taxed beyond their capacity and in which the insulation had deteriorated beyond its normal age.

Figure 1 shows a one-line diagram of the system as it existed before the modernization program started. You can see from this diagram that most of the power was fed throughout the mill from two large banks of single phase transformers (see Photo No. 1), although some power was fed directly from the low voltage generator bus in the power house.

The last major expansion in KVP's electrical system had occurred in 1927, when a 7500 kw 4800 volt turbine generator was installed. In the intervening years new loads were added to existing feeders. Since it was not considered necessary at that time to determine power costs of various segments of production, the loads were added to feeders capable of carrying them without regard to location of other loads. Over the years this had resulted in a number of criss-crossing feeders. Difficulties in tracing lines when troubles were encountered naturally resulted. Many of the cables were old and needed replacing from an insulation standpoint, as well.

Though KVP management recognized the existence of these and other problems, action had been deferred because it was impossible to secure the necessary equipment during the war years. Funds also had to be channeled, instead, into an expansion program at KVP's pulp mill at Esponola, Ont., built in 1943. However, during these years several studies of the problem were made, with the result that the mill electrical engineering department had well-documented data files and drawings on the existing system.

First Step—A Master Plan . . .

After World War II, when it seemed feasible that a modernization program could be instituted, it was decided first to prepare a master plan to show the ultimate system as it would exist at the completion of the program. Then a step-by-step plan for the change-over was drawn up. (Figure 2 shows the simplified one-line diagram of the ultimate system as it exists today.)

The economic studies carried out as part of the planning program indicated that the project would be completed in five yearly steps. In order to keep all sections of the mill in operation, it was decided to begin the program simultaneously in both the power house and production mill, completing approximately one-fifth of the work in each during each year.

Throughout the program, therefore, both the old and the new switchgear in the power house were energized at the same time. As new switchgear was installed in the power house another section of the old switchgear would be de-energized and dismantled. During this transition period, it was necessary to have a detailed plan of the physical layout so that feeders and circuits could be transferred on weekends with a minimum of time and expense and no production down time.

In the mill, the problem of placing unit substations near the center of

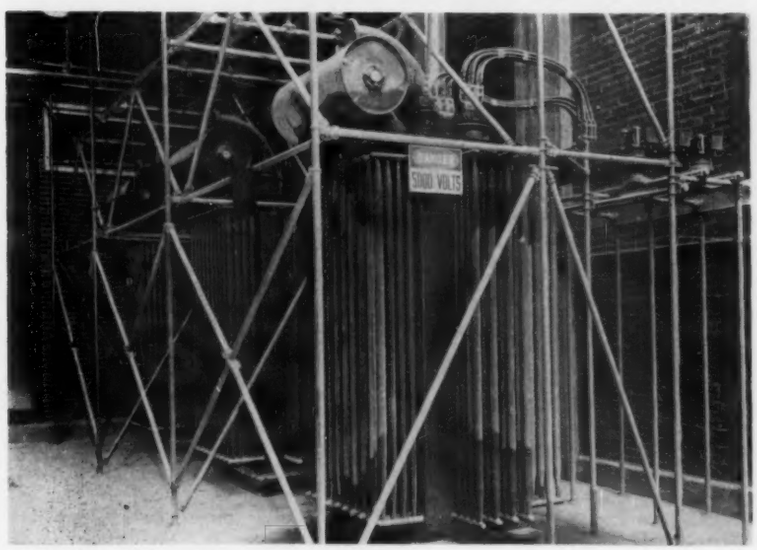


Photo No. 1—How power was fed before modernization
One of two old 5,000 kva transformer banks

Ray Chermak **Dave Gearhart**

Another "How To Do It" —About The Authors

This is the second time in recent years that Raymond M. Chermak, supervisor of the electrical dept., KVP Co., and David B. Gearhart, who is General Electric's top representative in the pulp and paper field in Michigan, have teamed up to write an electrical "how-to-do-it" for PULP & PAPER.

Mr. Chermak, with a Czechoslovakian heritage, was 7th son of an all-boy family. He was born in Hutchinson, Minn. The parents and all seven boys played musical instruments and their family orchestra consisted of piano, two violins, bass fiddle, trombone, trumpet, two saxes and drums. The father was a railroad blacksmith.

All seven sons went to college. Their parents helped but Ray had to work while attending the U. of Minnesota. He was lighting technician for the college theater, waited on tables in a sorority house, did government work.

During World War II he toured many U.S. shipyards, installing gun controls on fighting ships. He met his wife in Kentucky, while serving with Naval Ordnance. He was with General Electric, installing a Beloit machine drive at KVP, just before he joined the latter company. At KVP he was responsible for all electrical installations and maintenance. He recently resigned this position to accept appointment as responsible for all electrical equipment and maintenance for all divisions of Allied Paper Corp.—which are the King and Monarch Divisions, the older divisions in Kalamazoo, and the newly acquired Bryant Paper Co. Division in Kalamazoo and A.W.P. Paper Co. Division in Albany, N.Y.

Mr. Gearhart, based in Kalamazoo, is responsible for sale and application of G.E. apparatus to the paper mill industry in that area. He graduated from Iowa State in 1927 and has been with G.E. ever since. He was with International G.E. two years, then in Detroit, and then in Kalamazoo, since 1939. He was born in Hopkinton, Ia.

load concentration clearly brought to light the necessity of selling all levels of management on the importance of reliable and adequate electrical services. This physical location problem was solved by using pyranol-filled transformers, which made it possible to locate the substations within building areas, close to the load centers and also close to the old system so that the problem of transferring circuits was minimized. See Photo No. 4.

A study of the probable growth of load in the mill indicated that at the conclusion of this program it would be necessary to install additional generating capacity in the power house. With this in mind, it was possible to coordinate the elements of the new system so as to assure a satisfactory short circuit interrupting capability in the entire system after the installation of the new generating equipment.

What to Keep—What to Add . . .

When it came time to decide what the voltage levels would be, it was felt that the existing voltages of 4800 and 440 should be retained for economic reasons, though for an entirely new mill voltages of 13,800 and 440 would have been preferred. An influencing factor was the fact that a number of KVP's larger motors were on the 4800 level. The load growth study, however, indicated that at some future date it may be desirable to install a synchronizing bus in order not to limit the system's growth.

It also was decided that all 440 volt substations would be installed with Y secondaries to permit grounding of the 440 volt system wherever possible and thus obtain the benefits of a grounded system. The necessary equipment for establishing a ground on the 4800 volt system will be installed later.

The interrupting capacity study showed that several things had to be provided for:

1. All 480 volt motors of 60 hp and larger should be fed from their own individual feeder breakers;

2. The 4800 volt system level made it necessary to restrict the size of the substations to 1000 kva or less;

3. Several substations were fed from each main 4800 volt breaker and the number and size of substations were selected so that primary protection would be necessary only at the feeder breaker and not on each individual substation primary;

4. By selecting substations of 1000 kva or smaller it was possible to use 480 volt feeder breakers of 25,000 ampere interrupting capacity backed up by a 50,000 ampere interrupting capacity main breaker.

By providing a separate high voltage breaker and circuit for the bleach plant and for each paper machine with its auxiliaries and stock preparation system, it was possible to use a simple radial system on all substations and achieve maximum economy without sacrificing reliability or losing a great deal of production in the event of any future trouble in the electrical system.

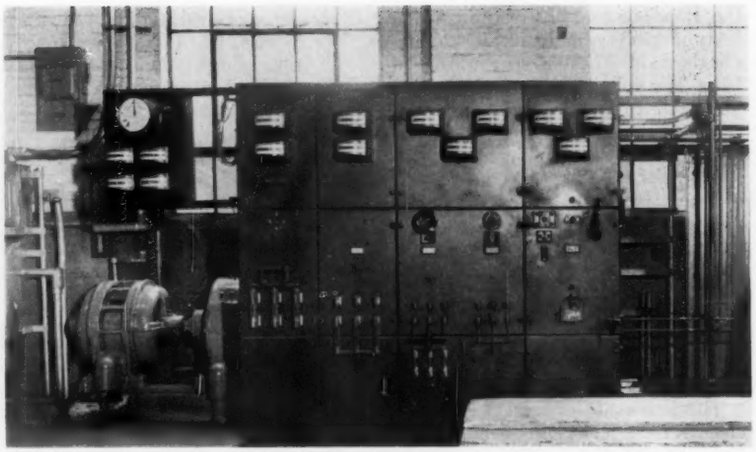


Photo No. 2—The old 1928 switchboard

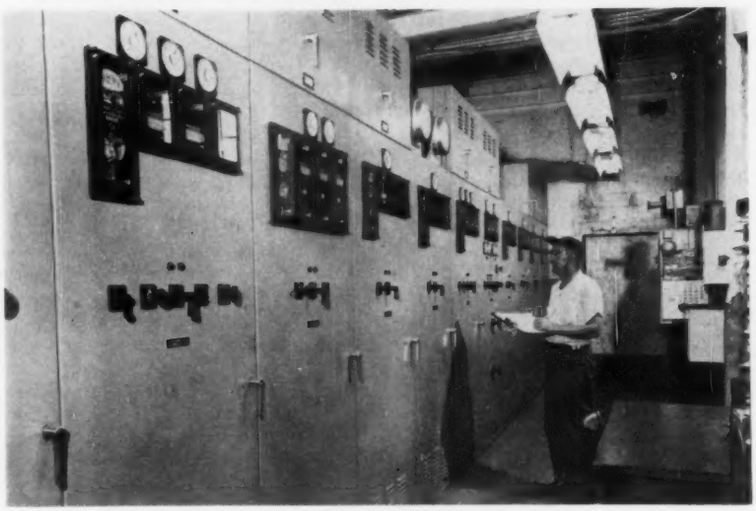


Photo No. 3—New metal-clad switchgear
During installation, old and new were energized at same time, as segments were installed, old segments dismantled

For the high voltage feeders varnished cambrick interlocked armor cable was used exclusively. See Photo No. 5. This was relatively simple to install, had a lower first cost, and could be adapted more readily to terminations without the use of potheads. By using larger motors on individual feeder breakers as stated above, it was possible to limit the size of 480 volt feeder cables to 500,000 circular mill. Therefore the largest conduit size that was used was no greater than 3 in.

The wet conditions found in a paper mill dictated the use of 480 volt feeders in conduit in almost every case. In several locations it was possible to use the same conduit that had contained the old cable.

With the modernization program essentially completed, the results anticipated at its inception are being realized. These are:

1. Greater flexibility, with reduced down-time and easier localizing of any trouble encountered;.

2. Lower line losses, better voltage regulation and reduced light flicker in the office areas;

3. Better protection for the electrical system and the driven equipment with attending lower maintenance costs;

4. Provision for future expansion included in the system.

Costs . . .

At the time the original plans were laid, it was estimated that total cost of the required equipment, on the basis of 1950 price levels, would be $620,000. At the completion of the program in 1955, the same equipment would have cost $900,000 at 1955 prices. But by initiating the program in 1950 and purchasing part of the equipment each year, the total cost to KVP was $750,000. Consequently, $150,000 was saved by spreading the purchase over the five-year period rather than waiting.

The additional savings in depreciation and interest charges due to spreading the program over a five-year period are obvious. Another important saving was the cost of labor: the step-by-step nature of the project made it possible to install all the equipment with the mill's own maintenance crews during slack periods.

From the original systems studies made cooperatively by the mill engineers and General Electric application engineers in the mid-40's, the preplanned system modernization program carried out on a step-by-step basis proved to be the correct approach to the solution of the problem which faced KVP at the end of World War II: how to finance a major modernization program and keep the mill running at the same time.

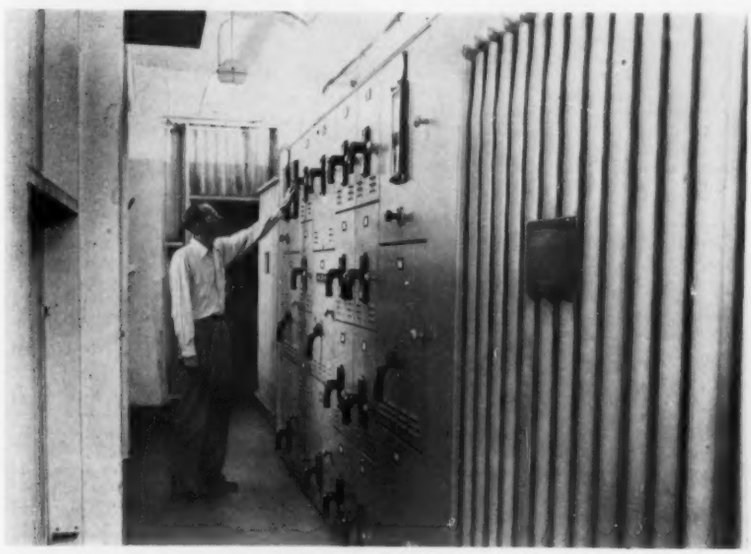


Photo No. 4—Unit substation near load concentration center
Pyranol filled transformer made it possible to put this 1,000 kva unit close to old system, minimizing transfers

Photo No. 5—Simple cable to install
Varnished cambric interlocked armor cable was used exclusively for high voltage feeders

Canadians Who Toured Mills in Britain

Thirty-three representatives of Canada's pulp and paper industry toured mills in the United Kingdom during September and October, about half the party crossing the Atlantic by air and the others by the liner Empress of Scotland.

The tour officially began in Edinburgh September 25, and the itinerary included a round of civic receptions as well as the technical conference at Southport.

Several of the Canadian delegates took advantage of the opportunity to cross to the continent and visit some mills in Scandinavia and other countries.

Those in the group, which traveled under the auspices of the Technical Section, Canadian Pulp and Paper Association, were:

Dr. D. Atack, Pulp & Paper Research Institute of Canada; G. H. Bancroft, Gilbert H. Bancroft; Dr. J. S. Bates, consultant; L. R. Beath, Price Bros. & Co.; Leslie Brown, Canadian government.

T. C. Catlin, Gilbert Paper Co.; R. M. Cooper, Powell River Co.; D. C. Currie, Howard Smith Paper Mills; D. G. Currie, E. B. Eddy Co.; Dr. R. de Montigny, E. B. Eddy Co.; T. B. B. Ford, J. Ford & Co.

L. G. Harris, MacMillan & Bloedel; Douglas Jones, Canadian Pulp and Paper Association; J. B. Jones, Ontario Paper Co.; Dr. J. L. Keays, Powell River Co.; E. G. Kirby, Price & Pierce; Ralph Libby, Libby Engineering; Dr. K. C. Logan, Anglo-Canadian Pulp & Paper Mills.

J. G. Macdonald, J. Ford & Co.; Jasper Mardon, Northeastern Paper Products; E. L. Neal, Anglo-Newfoundland Development Co.; Gerald Penney, Bowater's Newfoundland Pulp & Paper Mills; J. H. Perry, Norton Co.; A. J. Roche, Bowater's Newfoundland Pulp & Paper Mills; Gordon Rochester, Canadian government.

Marc Rolland, Rolland Paper Co.; George Smith, Bowater's Newfoundland Pulp & Paper Mills; J. N. Stephenson, Pulp & Paper Magazine of Canada; Gustav Sundt, Norton Co.'s Scandinavian representative; Andrew Sutherland, Millspaugh (Canada); D. M. Sutherland, Sutherland Refiner; C. E. Turner, Building Products; J. W. Wing, Gaspesia Sulphite Co.

Working on Washington Labor-Management Safety Conference

In Seattle's Olympic Hotel, PULP & PAPER's camera snapped this group. Seated at head of table are Bill Gorbutt (left), Scott Paper Co., Washington chairman, and S. W. Grimes, managing director, Pacific Coast Assn. of Pulp & Paper Mfrs. Others seated at table, left to right: K. H. Larkin, Weyerhaeuser, Longview; R. L. Mullen, Longview Fibre, Longview; Frank Brooks, Puget Sound Pulp, Bellingham; Louis Spicer, CZ, Port Angeles; Mr. Gorbutt; Mr. Grimes; Robert Hess, Pac. Coast Assn., Portland; William Zimmerman, Pac. Coast Assn., Portland; George LaHusen, CZ, Portland; Jack Robertson, CZ, Camas. Standing, left to right: Edward Kelley, Fibreboard, Sumner; Oren Parker, IBPS&PMW, Tacoma; Larry Wheeler, Longview Fibre, Seattle; Ralph Lawrence, Fibreboard, Port Angeles; C. A. Price, IBPS&PMW, Longview; John Sherman, vice president, IBPS&PMW, Tacoma; Robert Gilmore, Rayonier, Hoquiam; Cecil Clark, West Tacoma Newsprint, Steilacoom; Frank McCauley, Rayonier, Hoquiam; Art Harding, Weyerhaeuser, Everett; William Collins, Scott Paper, Everett; Willis Thompson, Simpson Paper, Everett.

Regular 3-State Program Set for Safety Conferences

• This winter's 11th annual Pacific Coast Labor-Management Safety Conference will be held in the regular manner—separate meetings in California, Oregon and Washington. California leads off with the first meeting, Jan. 24-25 at Los Angeles.

The Oregon meeting is scheduled for Feb. 28-Mar. 1 in Portland, and the Washington safety men meet Feb. 21-22 at Seattle's Olympic Hotel.

The conference is the joint effort of member mills of the Pacific Coast Association of Pulp and Paper Manufacturers and the International Brotherhoods of Paper Makers and Pulp, Sulfite and Paper Mill Workers.

"Emphasis this year is on rank-and-file participation," conference spokesmen told PULP & PAPER. "Larger turnouts are expected. Each mill can now send a minimum of two labor delegates; larger mills will send even more. Our programs will concentrate on bringing more delegates into full participation.

"Some topics to be covered include the promotion of uniform application of the American Standards Association reporting rules and methods. We are aiming for a uniform interpretation of borderline cases. Of course, our overall goal, as always, is the finding of ways and means to further reduce accidents.

"This year there are roughly another 1000 employes in West Coast mills, so our program is growing in importance. Non-association mills in the area are invited to send guest delegates, and we always get observers from outside our area, such as from British Columbia and Alaska."

Planning Committee Polishes Details for Oregon Meeting

(Left to right) R. W. Hess, Pac. Coast Assn. of Pulp & Paper Mfrs.; A. Wiekmann, Fibreboard Products Inc., Portland; Wm. Zimmerman, Pac. Coast Assn. of Pulp & Paper Mfrs., Vice Pres. A. E. Brown of IBPM; W. Riggs, IBPS&PMW; H. Croner, Crown Z, Lebanon; Chairman Geo. LaHusen, CZ, Portland; Cloyd Smith, Publishers' Paper, Oregon City; C. Nyland, CZ, St. Helens; M. Cashman, CZ, West Linn; N. Chickerin, Weyerhaeuser Pulp Div., Springfield; C. Bryant, Western Kraft Corp., Albany; H. Otterlei, Coos Bay Pulp Corp., Empire.

Heads Importers

KARL A. CLAUSON (left), pres. of Stora Kopparberg Corp., newly elected pres. of Assn. of American Wood Pulp Importers. He formerly was secy.-mgr. of Pulp Consumers Assn. of U.S.
WILLIAM B. McGOLDRICK (right), of Price & Pierce Ltd., elected vice pres. of Wood Pulp Importers.
William Flohr of Parsons & Whittemore was elected treasurer and Per Westad of Borregaard Co., was chosen secretary.

Bolton Contest Announced

The Superintendents Association and John W. Bolton & Sons, Inc. announce the subject for the 10th Bolton Award essay contest to be, "My Responsibilities to Others in My Company."

Cash awards are made to ten national winners—$1,000, $750, and $500, and seven prizes of $200 cash. The contest closes at midnight Mar. 31. All papers are to be mailed to the Secretary and Treasurer, American Pulp and Paper Mill Superintendents Assn., 327 So. LaSalle Street, Chicago 4, Ill. Essays are judged on value, interest and originality of the ideas included, rather than on writing skill, by judges who have no knowledge of author identification. The contest is open to all employes of pulp and paper mills in North America. Contestants are asked to confine their papers to approximately 1500 words, typed with double spacing.

Newsprint Price Rise

Abitibi has led off what is expected to be a general increase of newsprint prices in the industry. Abitibi's $134 a ton, delivered New York, is a $4 increase, effective Mar. 1.

In view of high freight rates in Canada, as well as increased labor and production costs, Pres. M. J. Foley of Powell River Co. said an $8 to $10 increase would be more realistic.

How To Do It

NEW WAY TO HANDLE CHIPS . . . This vacuum chip unloader at the Shelton, Wash., mill of Rayonier Inc. moves a carload of chips per hour. Operated by one man, in control booth at top left, the suction line curving into the car feeds a separating cyclone at right, and the chips then fall into a star feeder where they are blown back over tracks to a storage silo.

How Rayonier Mill Unloads Chips From R.R. Cars

A new method of unloading pulp chips from open-top railroad cars and conveying them to storage silo has been introduced at the Shelton, Wash., mill of Rayonier Inc., through a Conveyair vacuum chip unloader combined with Chipveyor, both by Conveyair Co.

Special features embrace a twin port rotating pickup head, air-tight heavy duty knuckle joints to provide flexibility in the suction pipe, and full-flow separating cyclone.

The system at Shelton is designed to unload one car of chips (averaging 22 units) per hour. Power requirements for the size of vacuum system total a maximum of 125 hp. Power needed for the pressure system depends on the distance from the separating cyclone to the storage area. At Rayonier's Shelton mill a 75 hp motor is used to convey the chips a horizontal distance of 300 ft. and 100 ft. elevation with 300° of bends.

The rail car of chips to be unloaded is moved back and forth under the nozzle by means of a reversing car puller.

The operator, in a control booth over the car, raises or lowers the pickup head and moves the nozzle the width of the car as desired, by remote controls.

Rotating suction nozzle is designed to break up frozen chips or tightly compacted chips when necessary. The suction pulls the chips into the separating cyclone where the vacuum releases the material and the chips fall into a Conveyair star feeder. From the feeder the pressure system takes over and conveys the material to the storage silos.

The installation is said to be about one third the cost of a pit or dumping system.

Although the Shelton system is designed for one car per hour the installation can be designed to work at any capacity desired by the customer.

It is pointed out that it is not necessary to use a pressure system in connection with vacuum system, as the chips can be discharged from the separating cyclone onto a belt or other conveyor. Although this system is primarily used for chips, it can be adapted to other materials such as hog fuel, fines, etc. Systems for side unloading of cars are also available.

Tractor Shovel for Acid

Here's how Scott Paper Co. at Winslow, Maine, uses a Clark Model 12B tractor shovel in acid preparation. Unit scoops sulfur from large pile in storage room (left), carries is about 50-ft. and dumps it into hamper (right) on wheels. Electric winch and cable pull car up steep ramp and sulfur is dumped into burners.

Newsprint Association Reports Growth in U. S.

One of the notable features of North American newsprint trends in recent years has been the relatively rapid growth of the industry in the U.S., according to the Newsprint Association of Canada.

By the end of 1957, this report predicts, capacity of U.S. newsprint mill is expected to reach almost 1,900,000 tons, about double the 1939 figure and more than one million tons above 1946.

"U.S. production follows essentially the same strongly rising trend, though for 1955 and estimated 1956 production is well above capacity. In part, this results—as it does in Canadian mills—from mill expansions during the year not anticipated in the initial capacity estimates for the year. It also results from unexpected production from marginal or fringe mills not normally producing newsprint but attracted to it by short-term demand pressures. For 1957, the production estimate envisages operations essentially at expected capacity; with a good demand and supply relationship in prospect, newsprint output from the marginal producers can be expected to decline."

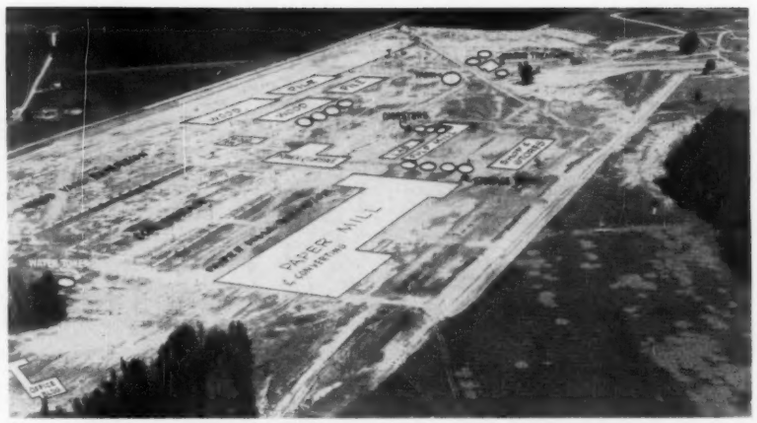
World newsprint production in 1956 set a new record, the free world countries producing almost 12,500,000 tons, an advance of 8.1% over 1955.

The year 1956 was one of rapid advance in North America and abroad. Production in Canada and the U.S. reached nearly 8,250,000 tons, up more than half a million tons over last year. The Canadian newsprint mills, with an estimated total production of 6,500,000 tons, accounted for 310,000 tons of this increase. This is the largest gain in output since 1947.

Consumption of newsprint in the U.S. reached a new peak of about 6,900,000 tons, up more than 250,000 tons over 1955, the previous high.

RISING WORLD TRENDS . . . Newsprint production in the free world countries other than the U.S. and Canada is estimated at about 4,200,000 tons in 1956, an increase of more than 400,000 tons in the year, while consumption in these countries was nearly 5,000,000 tons. The difference between production and supply was made up of imports, mostly from Canada.

Looking ahead to 1957 the report foresees a continuation of the current rising world trends. Regarding U.S. newsprint requirements, the report states "economic prospects are generally deemed to be favorable. Advertising outlays can be expected to expand and newspapers will share in this, continuing their leading position in the mass media field."



New Mill Site in North Alabama

Above is an artist's sketch, drawn over a picture of cleared land, which shows the layout of the Naheola, Ala., mill which is being constructed there by Marathon Corp. This will be a two-machine pulp and paper mill making specialty grades of paper which will mark another long step in the progress of the Southern pulp and paper industry into quality grades.

A native resident of Alabama, who claimed he knew every town in the state, was stumped when he was asked by a PULP & PAPER editor about Naheola. He won't be very long—not after Marathon gets going. New to Naheola is a state highway, which connects it with Pennington, Ala. 2½ miles westward.

John E. Spalding has been named manager of Marathon's Naheola Division.

McCartney is Reliance V. P.

Norman J. McCartney was recently appointed vice president and general manager of Reliance Electric & Engineering (Canada) Ltd., Welland, Ont., while retaining duties of general sales manager. There was a confusion in names in reporting this event in a recent issue of P&P, which we regret.

Scott Staff Conference

Staff at West Coast Division, Everett, pauses during conference for PULP & PAPER camera. Clockwise around table, beginning at far left:
JAMES T. LIENESCH, asst. chief consumer's rep.; JOHN M. CARLSON, pulp mill supt.; D. L. (JIM) DYE, chief consumer's rep.; CECIL H. BALDWIN, tech. control mgr., paper mill; NORMAN S. LEA, tech. contril mgr., pulp mill; J. HOWARD SCHNEIDER, procurement mgr., West Coast Division; A. J. (BEN) HAUG, paper mill production mgr.; LOREN V. FORMAN, general mgr.; VALDOR E. CLARK, plant accountant (back from table); EDWIN W. MEYER, JR., plant traffic mgr. (also back from table); L. M. (BUD) JOHNSON, chief engineer; WILLIAM B. GORBUTT, plant personnel mgr.; N. W. (BILL) COSTER, pulp mill mgr.

Says Nuclear Power Will Soon Serve Pulp and Paper Mills

Dr. Lincoln Thiesmeyer, president of Pulp and Paper Research Council, Montreal, says cheap nuclear power is coming faster than most people believe. In the not distant future, use will be made of small portable atomic plants which will free pulp and paper mills from dependence on sites of abundant hydro-electric energy or conventional power such as oil and gas.

The Montreal research authority also recently told the Western Forestry and Conservation Assn. that already there is experimentation with cooking wood with radar, that is, by high frequency heating which can develop temperatures quickly and uniformly by exciting all the molecules in the substance treated. He predicted trailer truck plants which would go from sawmill to sawmill for processing chips and edgings and take them away as a completed product.

Will Market Pulp for Dryden

Northeastern Paper Products Ltd. has taken over from Dryden Paper Sales Ltd. the responsibility for marketing of all production of Dryden Paper Co., whose mill is in Dryden, Ont.

President E. L. Goodall says that the company's growth has necessitated reorganization of Dryden's sales operations. Dryden Paper Sales, a wholly owned subsidiary of Dryden Paper Co., with head office in Montreal, has been merged with Northeastern Paper Products, which markets all the output of Anglo-Canadian Pulp & Paper Co. and Anglo-Newfoundland Development Co.

The former staff of Dryden Paper Sales under the management of G. L. Bennett is now a part of the Northeastern organization, with head office in Quebec and sales offices in Winnipeg, Toronto and Montreal.

A Safety Record On Way At Port Townsend Mill

The Port Townsend, Wash., Division of Crown Zellerbach has completed a full calendar year without experiencing a lost-time injury. For 1956 this means 1,649,151 man hours and is part of an accident free operation that dates from June 19, 1955, making a total of 2,508,462 accident free manhours. The latter figure is an all-time record for Crown Zellerbach Corp. and is the first time a primary mill division has completed a full, accident free, calendar year.

This makes Port Townsend the leading mill in the pulp and paper section of the National Safety Council's annual safety contest.

Manson Sutherland Heads Refiner Corp.

Sutherland Refiner Corp. of Trenton, N.J., announces retirement of Lionel M. Sutherland, president, and Douglas Sutherland, vice president. D. Manson Sutherland, founder of the corporation, will assume the duties of president. He will also assume the duties of president of Sutherland, Inc., Trenton, and of Sutherland Refiner Ltd., Montreal.

Southern California Club Elects

At a Statler Hotel, Los Angeles meeting Dec. 13, the Paper Mill Men's Club of Los Angeles elected new officers: Seated (left to right): RICHARD A. McDONALD JR., former club secretary, elected vice president; JACK PERRIN, Towelsaver Inc., retiring 1956 president; ASA L. MURRAY, Oregon Pulp & Paper Co., newly elected president. Standing (left to right): W. J. CULVERHOUSE, Potlatch Forests Inc., elected treasurer, and C. A. MEGINNISS, Oneida Paper Products, Inc., new secretary.

New Raw Material for Plastics

It costs 3¢ a lb. and may be cheaper, says DR. HERMAN F. MARK, (right) Director of the Polymer Research Institute of the Polytechnic Institute of Brooklyn, as he shows sample of plastic pipe made from new German-developed (Zeigler process) polymer, to JOHN DOHERTY (left), Union Bag-Camp Corp.

More on "Marriage" Of Paper and Plastics

Newest developments in high polymers and their application "together with paper, never instead of paper," were recently discussed by Dr. Herman F. Mark, director of the Polymer Research Institute of the Polytechnic Institute of Brooklyn.

Speaking to some 70 members of Metropolitan TAPPI in New York City, Dr. Mark said these new developments in Europe a few years ago are a new type catalysts to polymerize low molecular weight organic substances.

Industry's capacity to do this, he said, has been founded essentially on activation by a catalyst. "You have to set stage for chain reaction," he said.

These new raw materials for plastics were developed by Dr. E. Ziegler in Germany after 30 years of work in the field of complex components.

Up to now the cheapest of these polymers have been butadiene and vinylchloride at around 10¢ per lb. and up. Some of these new raw materials are around 3¢ to 3.5¢ a lb. and someday will be cheaper, predicts Dr. Mark.

New branch type polyethylenes are being developed by use of these new catalysts and according to experienced industry observers, show marked differences than previously available high polymers. Paper men will be especially interested because of the possibility of combining them with paper to produce a new world of products; made possible by this new process.

PICTURES OF PEOPLE IN THE NEWS

In Canadian News

E. P. TAYLOR (left), of Toronto, is chairman of B.C. Forest Products, Ltd., now building $36,000,000 pulp mill on Vancouver Island, and boss of many other Canadian industries, including St. Lawrence Corp., Price Bros. & Co., and Howard Smith Paper Mills. His other interests run to sugar refining, brewing, farm equipment manufacturing, chemicals and finance.

F. W. BRADSHAW (right) is now executive assistant to President G. M. Hobart, Consolidated Paper Corp., Ltd. He joined Consolidated in 1934, serving as chief engineer, mgr. of Laurentide Div., and mgr. of mfg. He's a grad of McGill and of Harvard School of Bus. Adm.

Promotions at KVP Co.

Changes in supervision of Paper Manufacturing Division, The KVP Co. (left to right):

LESLIE P. HILL, asst. supt. of Paper Mill No. 2, promoted to supt. of Paper Mill No. 1. Started with KVP in 1924, as fifth hand on a paper machine.

ALFRED B. PERLICK, supervisor of beater rooms, bleach plant and unloading, has been appointed asst. supt. of Mill No. 2. He started for KVP in 1926, after attending U. of Detroit. After serving as a paper tester, he helped establish the company's present water softening system.

GEORGE A. JOHNSON, supt. of Mill No. 1, has retired. He first came to KVP as a machine tender is 1925.

ALAN C. BURN, appointed joint managing director of Black-Clawson International Ltd., London. He was previously with United Glass Bottle Mfrs. Ltd. and Imperial Chemical Industries.

New Responsibilties in Scott

Pres. T. B. McCabe, president of Scott Paper Co. announces that HARRISON F. DUNNING (left) and PAUL C. BALDWIN (middle), vice presidents and directors, and FORREST W. BRAINERD (right) assistant vice president, will assume new responsibilites.

Mr. Dunning takes over executive direction of merchandising activities for all Scott retail brands. Merchandising activities conducted by the company's Hollingsworth & Whitney and Detroit divisions, and industrial pulp sales, will continue to be handled by those divisions. He started with Scott in 1930 as industrial salesman.

Mr. Baldwin, in addition to continuing his direction of engineering, research and development, will assume responsibility for all manufacturing. He started in 1940 with Scoot as a lab asst. Within 3 yrs. he became supt. at Chester. To aid Mr. Baldwin in the discharge of expanded duties, Mr. Brainerd will become his executive assistant. He started in 1930 as third hand on a machine at Chester.

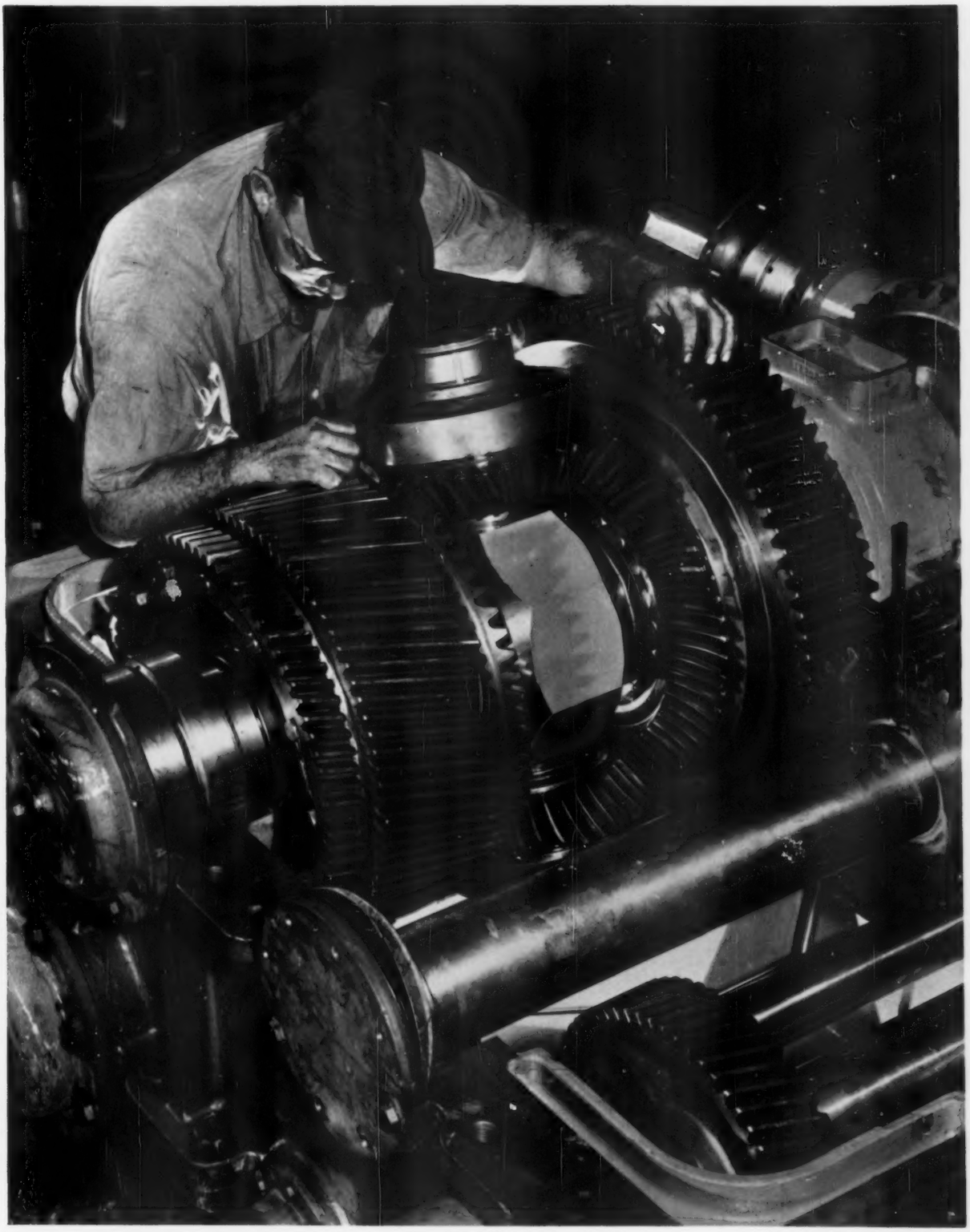
"The three changes in executive functions will add immeasurable strength to the Scott management team for the challenging years immediately before us," Pres. McCabe said.

Converting Superintendents Meet

Most Pacific Coast plants were represented when 26 members of the Converting Superintendents Assn. met at the new Richmond, B.C., plant of Crown Zellerbach Canada under chairmanship of CECIL I. KNAPP, supt. of the finishing department CZ, Camas, Wash. Left to right: E. D. OCHS, CZ, Camas; URBAN GRANDEAU, CZ, Port Townsend; CECIL I. KNAPP, CZ, Camas; J. L. GODDING, CZC, Richmond, and W. C. GIGLER, resident manager of the $4,500,000 Richmond plant.

Gold Watches Brought Them Together

At the Edmundston, New Brunswick, mill of Fraser Cos. Ltd. (left to right): E. E. STEVENSON, mill office mgr.; J. B. ROUSSEAU, office accountant; C. T. CLARK, mill mgr.; LEON FRANCOEUR, wood handling foreman; R. D. BAIRD, asst. supt. of wood handling; L. M. PLOURDE, wood handling foreman. As is quite obvious, the watches, for 25 years' service, went to Messrs. Rousseau, Francoeur and Plourde.



J. W. MILLER

Beloit Differential Drive Profitably applied both to machines making rag-content paper at several hundred feet per minute and wide, high-speed machines producing food-container board, corrugating medium, kraft paper, and newsprint. Over 300 units now running in the field. For details, please turn page.

BELOIT DIFFERENTIAL DRIVE

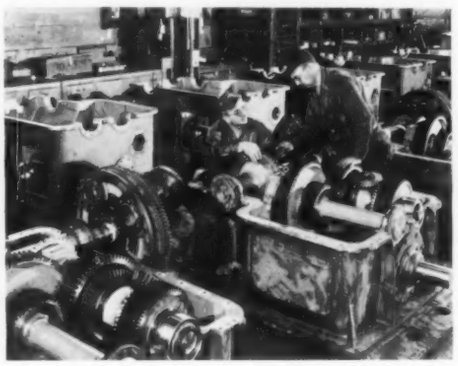
. . . holds steady draws mechanically, puts minimum strain on sheet, reduces breaks

A new approach to the problem of driving a paper machine was introduced in 1951 with the Beloit Differential Drive. Since all equipment, from fourdrinier through reel, is part of the same machine—not a group of separate machines—the various sections are geared together and rotate together at all times. Each roll forms and processes the web in perfect synchronization with all other rolls, thus establishing an almost perfect draw between sections of the machine.

This fixed ratio between all sections is achieved by a machine-floor-mounted lineshaft extending from couch to reel. A turbine or electric motor near the center of the machine provides power for the lineshaft, driving the patented differential drive units at the drive points along the machine.

From the operator's point of view the Beloit Differential Drive gives unmatched control of draw conditions from panels conveniently located along the tending side of the machine. At his fingertips are controls for faster-slower, clutch and optional brake, with an added control at the calender and reel for slack take-up.

From the standpoint of the maintenance man the Beloit Differential Drive has the obvious advantage of requiring minimum attention during long, trouble-free performance. Differential-gear units and reduction-gear units are all lubricated automatically from a central oiling system, with an oil pump inside each differential unit as an additional safety factor. There



is no need for special technical training of maintenance crews, since the Drive uses standard types of shafting, gears, and bearings which are commonly found in the paper mill.

For the paper mill superintendent, the Beloit Differential Drive means higher quality paper and a minimum of production interruptions. Tests are higher because of more accurate, stable control of draws. Reduction of strain on the sheet likewise means that trim width of the finished sheet can be held more accurately than on a conventionally driven machine having equal wire width.

your partner in papermaking

BELOIT

PAPER MACHINERY

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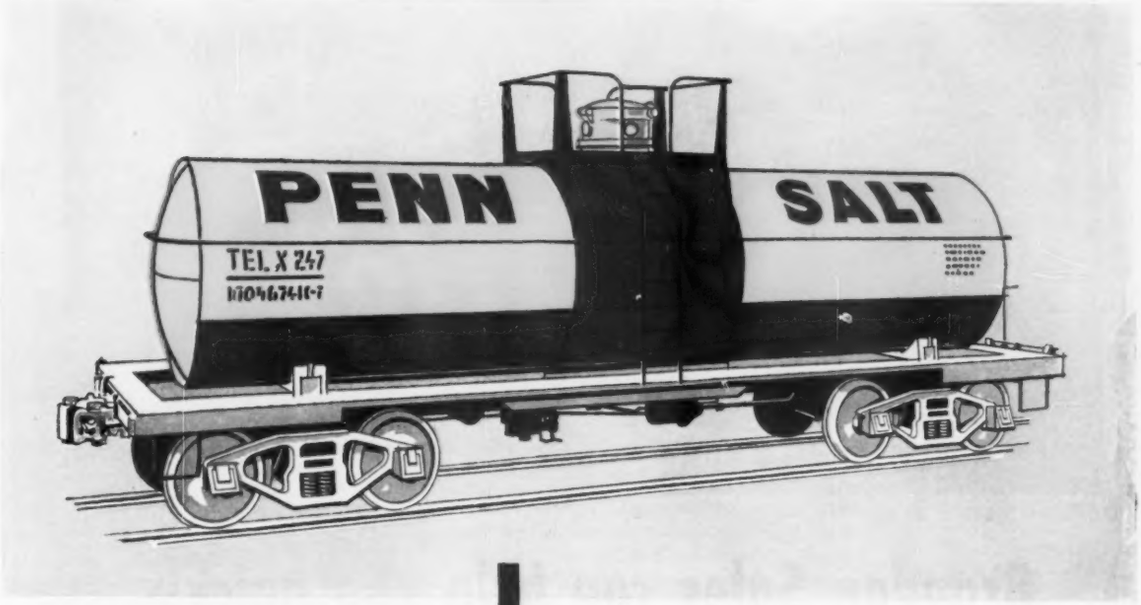
the Big 4

Pennsalt Basic Chemicals for Refined Pulp



1. Chlorine
2. Caustic Soda
3. Sodium Chlorate
4. Anhydrous Ammonia

Long a supplier of Chlorine, Caustic Soda and Sodium Chlorate to the pulp and paper industry, PENNSALT also offers Anhydrous Ammonia.

The ammonia base pulping process, although not a new development for the manufacturing of sulphite pulp, has many advantages: ease of waste disposal, increased production through reduction of cooking time and greater utilization of all woods. These advantages tend to reduce costs.

PENNSALT sodium chlorate produces chlorine dioxide which helps bleach wood pulps whiter and brighter with less deterioration of strength.

In addition to supplying chemicals of uniform quality, PENNSALT offers the assistance of its Technical Service Department.

Strategically located plants in Tacoma and Portland offer fast delivery and service.

Please write or telephone for detailed information on PENNSALT'S Big 4.

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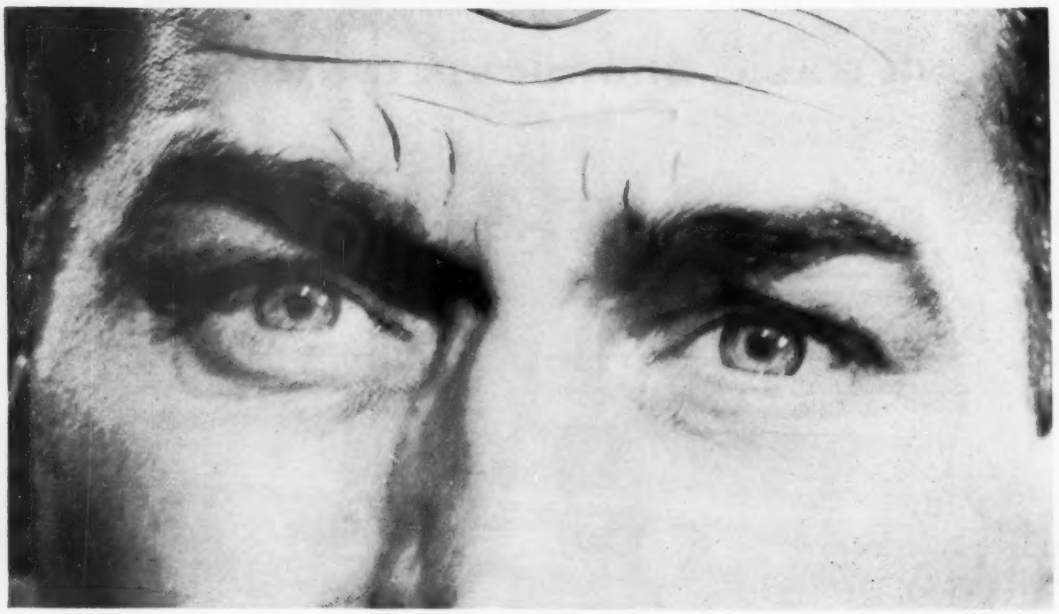
WESTERN DIVISION — PENNSYLVANIA SALT MANUFACTURING COMPANY

Pennsalt Chemicals

BURDENED *with Dryer Felt problems?*



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Avoid the worry and expense of needless downtime! Brandon's experienced staff gives you quick service, no matter when you need it.

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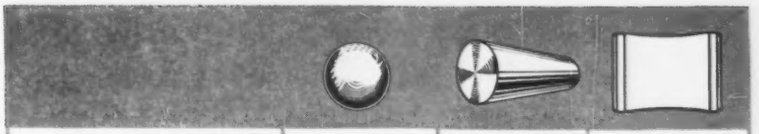
Midwestern States
Frank Clawson, Kalamazoo, Mich.
West Coast
M. J. Maguire, Portland, Oregon
Southern States
R. S. (Bob) Davis, Greenville, S.C.

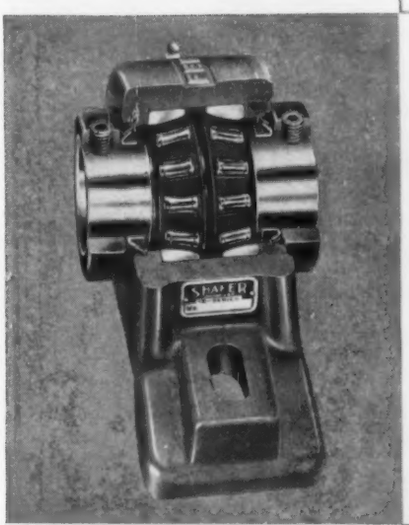
BRANDON DRYER FELTS

for heavy-duty
shock load service...

which bearing is best?

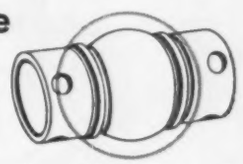


	Ball	Tapered Roller	Shafer
Low Friction Loss	✓		✓
Self-Alignment	✓		✓
High Radial Load Capacity		✓	✓
High Thrust Load Capacity		✓	✓
High Shock Load Reserve		✓	✓
Long Life		✓	✓
Fast, Positive Adjustment			✓
Lowest First Cost	✓		
Lowest Over-All Cost			✓



SHAFER Self-Aligning Roller Bearings give you more

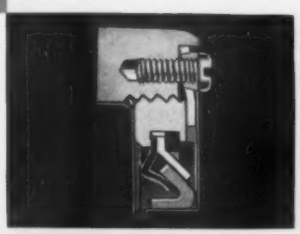
Shafer design combines both the low rolling friction of a ball and the high load carrying capacity of a roller. Under shock loads, continuous heavy-duty loads—even under conditions of misalignment—Shafer Bearings maintain full load capacity. You can get off-the-shelf delivery of standard pillow blocks, flange units, flange cartridge units and take-up and frame units. Call your nearby CHAIN Belt District Office Representative or Distributor.



Inner race is segment of a ball.

Roller presents matched curve surface.

and...



"Z" seal keeps dirt out ...grease in

Shafer exclusive—"Z" seal is an all-metal, non-rotating, true self-aligning seal that provides positive sealing under severe conditions.

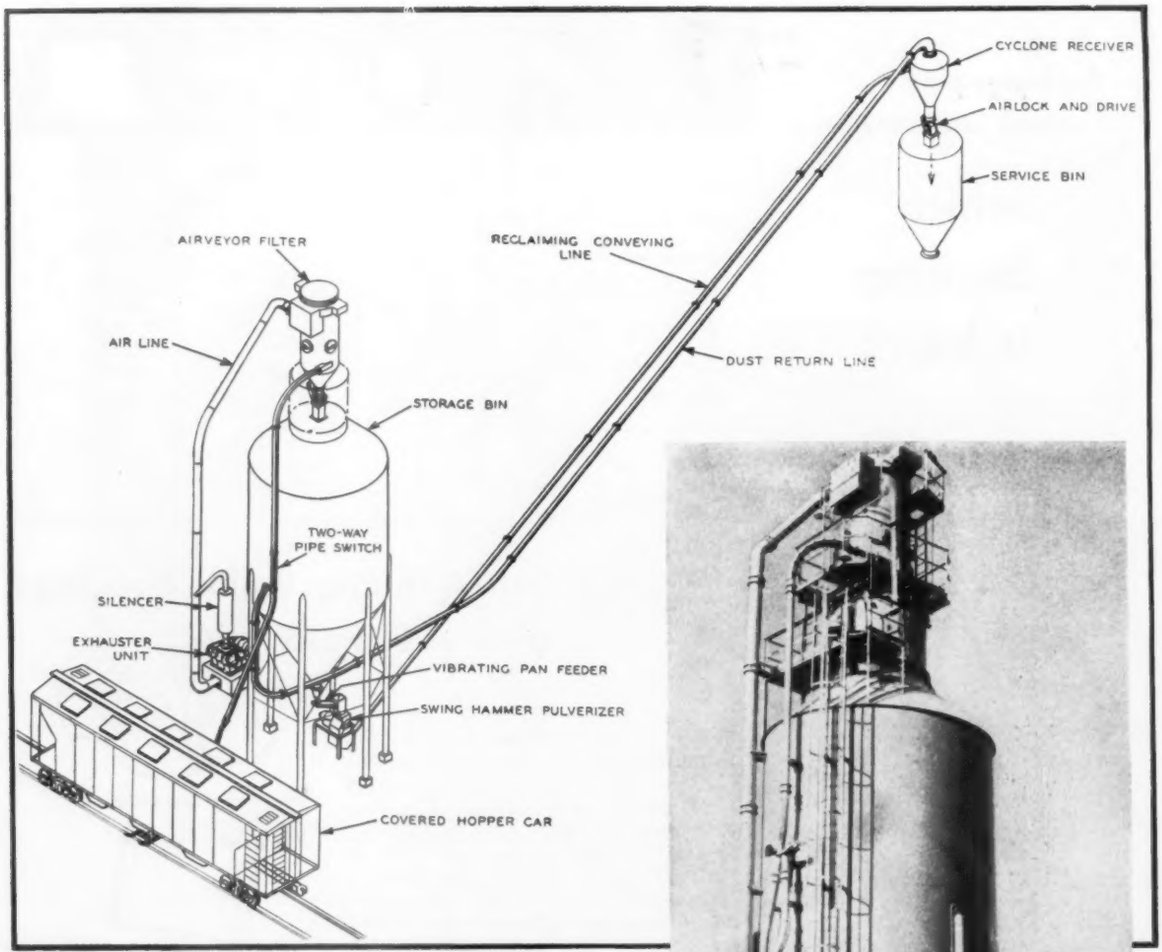
Micro-lock wear adjustment

Shafer® exclusive Micro-Lock provides 12-point adjustment compensating for wear or unusual operating conditions.

Get full information on high bearing capacity. Write for catalog 55A.

CHAIN BELT COMPANY

4691 W. Greenfield Ave., Milwaukee 1, Wis.



Another "Blue Chip" company installs The AIRVEYOR

Again, the Airveyor goes to work in the pulp and paper industry . . . this time for the $30 million, 350-ton bleached sulphate pulp and paperboard mill of the East Texas Pulp and Paper Company at Evadale, Texas.

The Airveyor unloads salt cake from either box or hopper-bottom cars, conveying to a main storage bin at rate of ten tons an hour. Also reclaims from storage and delivers to a service bin or feeder hopper above a mixing tank in the recovery building at rate of 8 tons an hour. One exhauster unit furnishes air for both unloading and reclaiming.

A second Airveyor system is also installed for the handling of wood chips received at the plant in trucks. Chips are discharged from a drag feeder to the Airveyor and conveyed a distance of 450 feet to storage at rate of 30 units an hour.

More than 150 Airveyor systems are in operation in the pulp and paper industry in the United States and Canada.

With over a quarter of a century of experience in air-conveying, Fuller engineers are well qualified to make a study of your problems and recommend equipment best suited to your needs. We will be glad to work with you.

FULLER COMPANY, 128 Bridge St., Catasauqua, Pa.

SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Chicago • San Francisco • Los Angeles • Seattle • Kansas City • Birmingham

FULLER COMPANY GENERAL AMERICAN TRADE MARK

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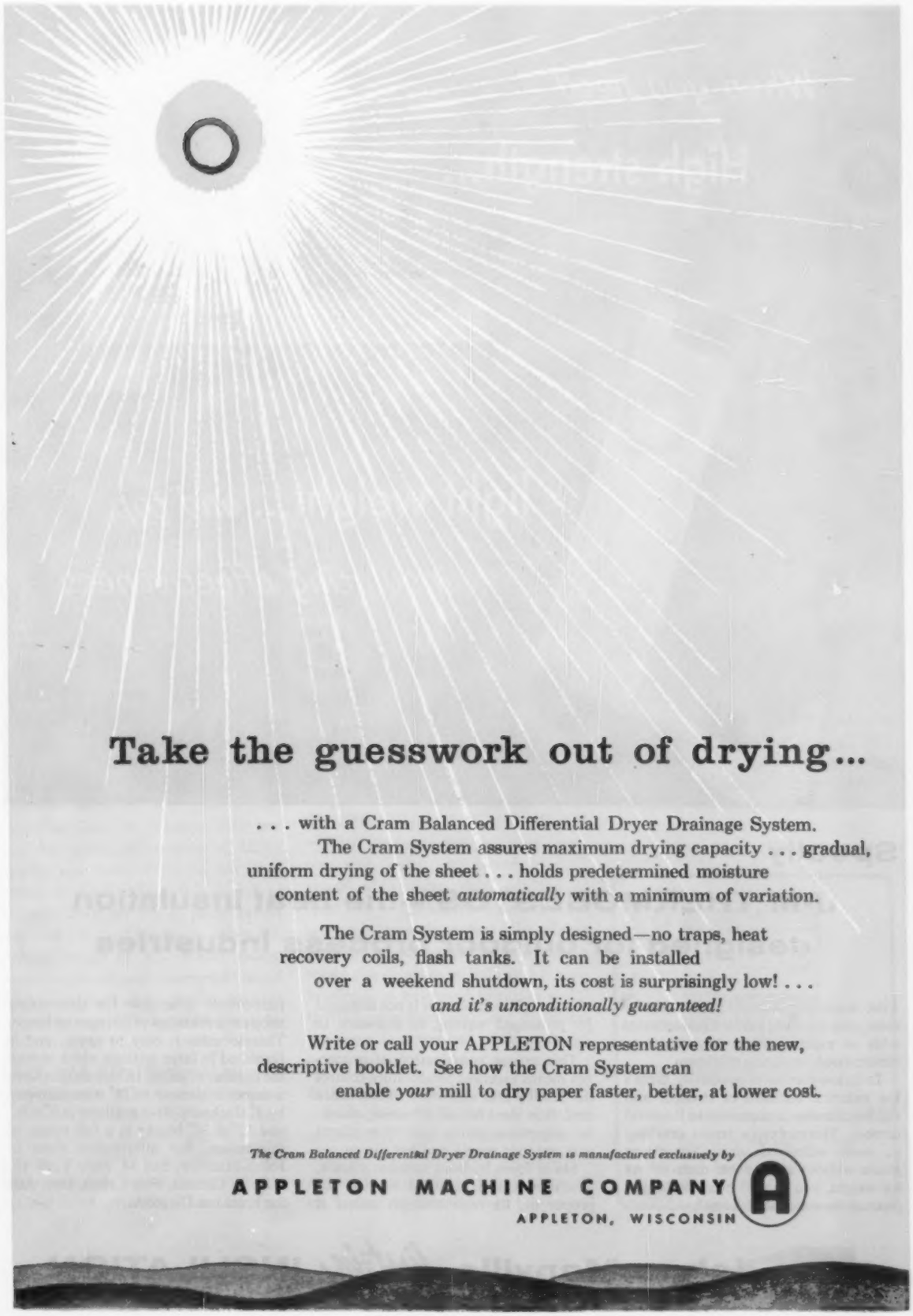
Fuller

. . . . pioneers in harnessing AIR


Take the guesswork out of drying...
. . . with a Cram Balanced Differential Dryer Drainage System.
The Cram System assures maximum drying capacity . . . gradual, uniform drying of the sheet . . . holds predetermined moisture content of the sheet automatically with a minimum of variation.
The Cram System is simply designed—no traps, heat recovery coils, flash tanks. It can be installed over a weekend shutdown, its cost is surprisingly low! . . . and it's unconditionally guaranteed!
Write or call your APPLETON representative for the new, descriptive booklet. See how the Cram System can enable your mill to dry paper faster, better, at lower cost.
The Cram Balanced Differential Dryer Drainage System is manufactured exclusively by
APPLETON MACHINE COMPANY
APPLETON, WISCONSIN

Specify

J-M THERMOBESTOS®—the heat insulation designed for outdoor process industries

For insulating outdoor process equipment, only Johns-Manville Thermobestos adds so many physical advantages to unsurpassed insulating efficiency.

To its low thermal conductivity, there's the welcome addition of strength and rigidity. Similar in chemistry to Portland cement, Thermobestos resists crushing . . . easily withstands unusual operating abuse without appreciable damage. As for weight, you can lift even the largest piece of the material with one hand. And, of course, Thermobestos is not damaged by prolonged wetting or exposure to water vapor.

This unique combination of properties means excellent temperature control (to 1200F) and minimum maintenance cost. It is ideal for oil refineries, chemical processing plants and other plants with outdoor vessels and hot piping.

Made from hydrous calcium silicate, Thermobestos is molded to size for proper fit. Its high strength makes it particularly adaptable for time-saving shop prefabrication of fittings and bends. Thermobestos is easy to apply, and is furnished in large sections which reduce the number of joints. In half-section form it comes in sizes up to 24″ pipe diameter by 3″ thickness. Also available in 6″ x 36″ and 12″ x 36″ blocks in a full range of thicknesses. For information write to Johns-Manville, Box 14, New York 16, N.Y. In Canada, Port Credit, Ont. Ask for brochure IN-169A.

JM PRODUCTS

Johns-Manville *first-in* INSULATION

MATERIALS · ENGINEERING · APPLICATION

DOW

Considerable mill data on the effectiveness of Separan 2610 is now available. Results overwhelmingly agree that this high-speed flocculant promises money savings and improved sheet properties in numerous operations of pulp and paper manufacture. Read for yourself the findings, as . . .

MILLS REPORT

on Separan 2610, the new flocculating agent

FILLER RETENTION—By adding 0.8 pound of Separan 2610® per ton of finished paper *(45-pound envelope stock)*, one mill reduced clay content from 550 pounds to 350 pounds. Ash increased 6.5%. Opacity went up 3 points to 90. Net savings: about $3.20 per ton of finished paper. In addition, sheet properties were improved. *On 50-pound offset,* another mill reduced clay content in the furnish by 25% and cut titanium dioxide requirements as much as 35% with a 0.25-pound addition of Separan 2610 per ton. Ash remained constant at 12%; opacity rose from 90 to 91. *On 31.5-pound hi-grade offset,* 0.5 pound of Separan 2610 per ton of paper raised ash to 9.3%, a 2.2% gain. From 92, opacity went to 95. *White patent coated news*—Report shows 0.5 pound per ton of board on a cylinder machine cuts fiber and filler in white water by 25% to 40%.

SAVE-ALLS — On flotation type, 1 ppm Separan 2610 saved $45 a day on flocculant cost for white water from publication-paper machine. Decreased sensitivity to pH changes was also indicated. In white water from an uncoated printing-paper machine, another mill overcame excessive solids content in the effluent: Separan 2610 at 3 ppm brought a 3-fold reduction, plus improved recovery and operation. *In a drum type vacuum save-all,* Separan 2610 treatment improved operation and increased capacity at 1 ppm.

PROCESS MILL WATER—Mill reports increased capacity of 50% with 0.15 ppm Separan 2610. Flocculant costs reduced 30%.

CLARIFICATION OF WHITE LIQUOR—Great improvements reported here, too, with only 0.02 pound to 0.03 pound of Separan 2610 per ton of lime. On a laboratory scale, this remarkable new flocculant also shows promise in white-water and de-inking waste clarification at 0.05 to 5.0 ppm loadings; in lime mud filtration at 1.0 to 10.0 ppm loadings; and in retaining fines as a wet-end additive at 0.1 to 0.5 pound per ton of paper.

ELIMINATES MANY OLD PROBLEMS—A synthetic flocculant of constant uniformity, Separan 2610 is effective over a wide pH and temperature range, is noncorrosive and presents no hazard in normal use. It also requires no preservative . . . and is especially easy to prepare and apply. A new disperser enables you to dissolve large amounts without a mechanical mixer!

A COMPLETE REPORT has been prepared, titled "Separan 2610 in the Pulp and Paper Industry". For your copy and/or a test sample of this new flocculating agent, write THE DOW CHEMICAL COMPANY, TECHNICAL SERVICE AND DEVELOPMENT, Dept. SC937G-2, Midland, Michigan.

New booklet reports more facts and figures on mill results. *Write for your free copy today!*

you can depend on DOW CHEMICALS DOW

new data proves: UREA is excellent for

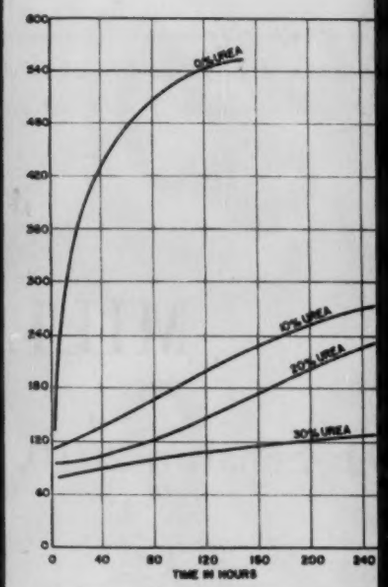
Viscosity Control

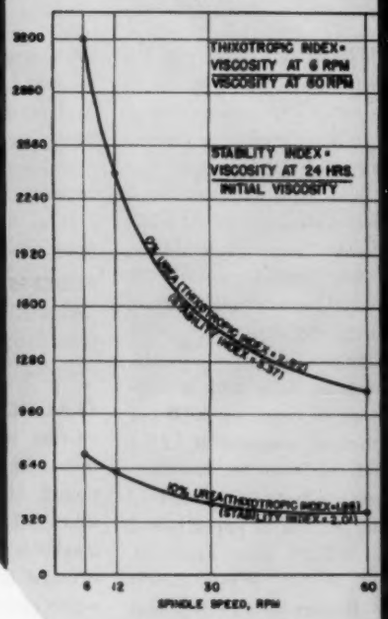
in paper coating

We can show you just how effective UREA is in controlling viscosity of modified starch, casein and Alpha Protein adhesive dispersions—and in reducing thixotropic index too.

The means: actual experimental data in the form of 15 graphs prepared by our research group, and based on field trials. Two graphs are presented on the right.

This data indicates that small amounts of UREA— • give large viscosity reductions, and drastically lower the rate of viscosity increase on standing • lower thixotropic index • permit use of adhesive dispersions with higher solids content.





Because UREA is readily available, and effective, paper coaters interested in improving operations and lowering costs will want to examine this data in detail. Send for the paper "Viscosity Control of Paper Coating Adhesives with UREA" by Belche and Ellis for the complete story.

Dept. U 2-25-4

Allied Chemical — NITROGEN DIVISION

40 Rector Street, New York 6, N. Y.

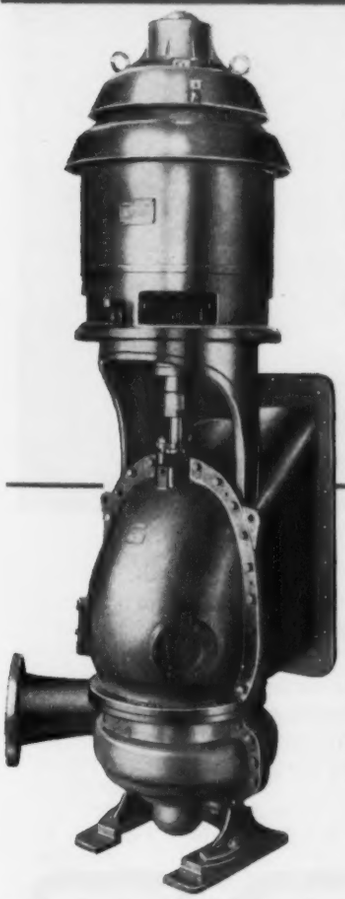
Ethanolamines • Ethylene Oxide • Ethylene Glycols • Urea • Formaldehyde • U. F. Concentrate–85 • Anhydrous Ammonia • Ammonia Liquor • Ammonium Sulfate • Sodium Nitrate • Methanol • Nitrogen Solutions • Nitrogen Tetroxide • Fertilizers & Feed Supplements

THE

Bingham "PULP HOG"

FOR DECKER, WASHER OR THICKENER

A STOCK PUMP THAT CANNOT BE AIR-BOUND!



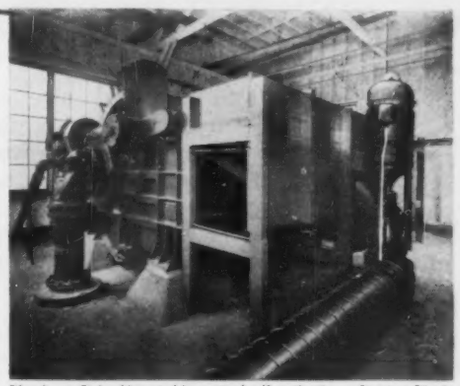
- HANDLES AIR-ENTRAINED PULP
- DISCHARGES PULP AT CONSTANT RATE
- UNINTERRUPTED FLOW INCREASES PRODUCTION
- RELIABLE PERFORMANCE UNDER ALL CONDITIONS

The *patented* Bingham Pulp Hog has been developed particularly for pumping stock containing large volumes of entrained air. This specially-designed pump takes stock from the doctor blades of Deckers, Washers, and Thickeners, and pumps it — without becoming air-bound or clogged — directly into mill system.

The Bingham Pulp Hog is characterized by a *large suction opening* and *non-clogging impeller of the top suction type. Impellers are specially designed to efficiently handle both high and low consistency stock.*

Bingham Pulp Hogs have records of *dependable performance* in major pulp and paper mills throughout the world. For more information call your nearest Bingham office or write for Bulletin No. 26.

- **Permits installation at convenient locations in mill flow line.**
- **Permits use of available floor space regardless of location of storage chest or other equipment.**
- **Operates successfully in basements or on any floor level.**
- **Eliminates need for dump chests.**
- **Substantially reduces building costs.**
- **Reduces operating heads, resulting in power savings.**



Bingham Pulp Hog taking stock directly from Doctor Blade of Washer. Weyerhaeuser Pulp Mill, Everett, Washington.

Bingham SINCE 1921

DOUBLE VOLUTE PUMPS RADIAL BALANCE

BINGHAM PUMP COMPANY

General Offices: **2800 N.W. Front Avenue, Portland 10, Oregon**

Factories: **Portland, Ore. • Vancouver, B.C., Canada**

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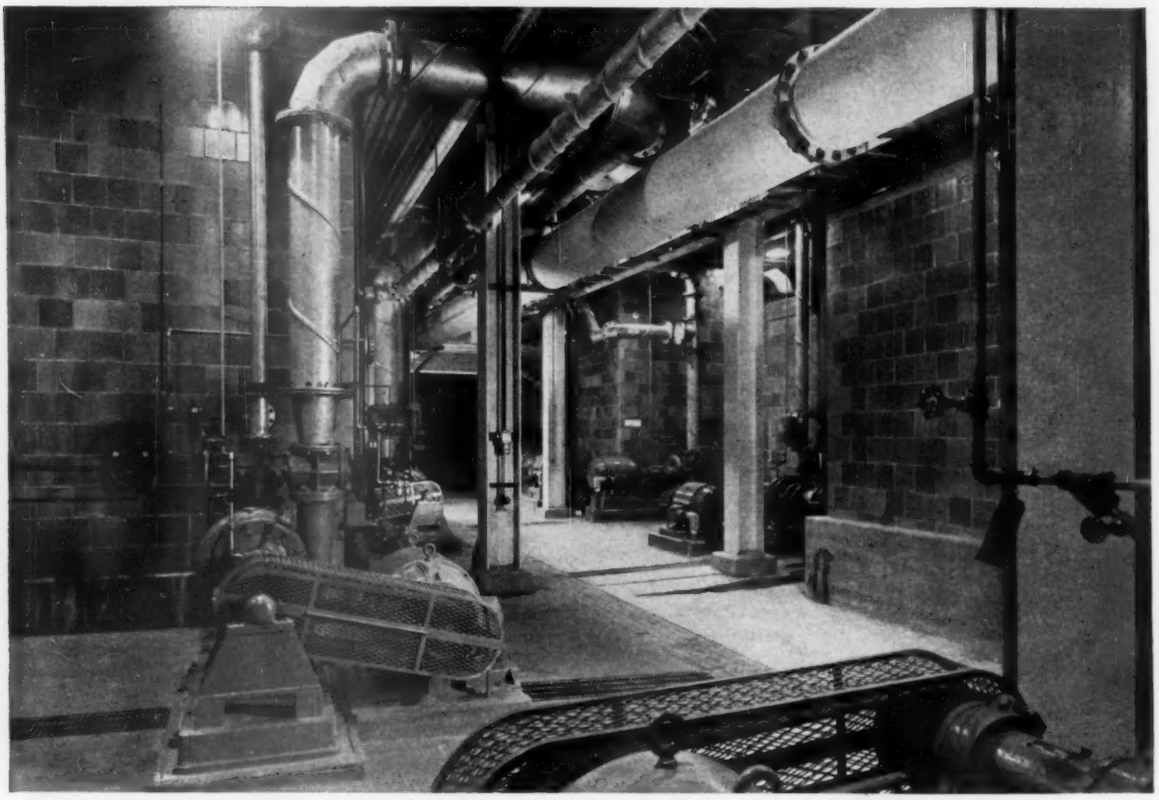
A SERVICE

To Make Your Pipe Dreams Come True!



Whether you need stock pipe lengths, standard fittings, special fabrications or engineered layouts, you can turn to Naylor to get exactly what you need in steel, alloys or stainless.

The accuracy of Naylor fabrication guarantees perfect fit whether your lay-out is simple or complex. Moreover, the extra strength and safety inherent in the exclusive Naylor lockseamed, spiral-welded structure is your assurance of maximum performance in every foot of the line.

Here is a complete service to fit your construction and maintenance needs. Write for Bulletins No. 507 and No. 525 or send specifications for quotation.

NAYLOR

NAYLOR PIPE COMPANY
1271 East 92nd Street, Chicago 19, Illinois

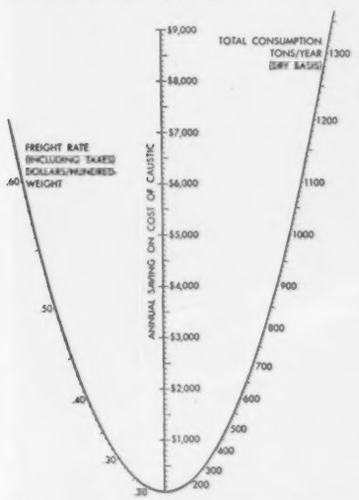
Eastern U.S. and Foreign Sales Office:
350 Madison Ave., New York 17, New York

BRIEFS
for caustic soda buyers

50% or 73%?
Choosing a supplier
New producing point

50% to 73%— some save, some don't

To estimate quickly whether you can save by switching from 50% to 73% liquid caustic soda, simply draw a line on this nomograph.



Start at your freight rate and draw to your annual consumption in tons, dry basis. Your approximate savings on freight will appear where you intersect the center line.

From this figure, subtract annual depreciation for dilution equipment. (We'll be glad to advise you on cost of this equipment.)

If you still show a saving, it would be wise to consider the big switch seriously.

For more facts on the economics of 50% and 73% caustic, check the coupon for a copy of our pocket-size *Caustic Soda Buyer's Guide.*

And for specific technical advice centered on *your* requirements, just phone or write the nearest Hooker sales office.

Choosing a supplier

Service is a large part of what you pay for when you buy caustic soda.

Here are some important "service" points to look for when you're considering a source of supply. (As a Hooker customer, you enjoy *all* of them.)

1. Supply security. How flexible are your supply lines? For instance, a supplier with plants and stock points on deep water may be able to offer you a choice of rail or water delivery. This can assure you steady supply in case of rail service interruption.

2. Realistic contracting. Your agreements with your supplier should realistically reflect your expected needs *and* the supplier's ability to consistently deliver the tonnage you need. Best yardstick for measuring this ability is a supplier's performance record. Hooker, for example, has an unbroken 50-year record of fulfilling contract commitments.

3. Engineering help. A supplier's engineering staff can help you set up a new caustic handling system—or revamp an old one—with advice, and with actual design assistance.

4. Safety programs. The men in your plant who handle caustic soda can benefit from safety suggestions offered by your supplier. You should have on tap the latest in safety equipment, plus up-to-date information on the safe handling of caustic soda.

We'd be happy to enlarge on these points, with your caustic requirements in mind. A phone call or note to the nearest Hooker sales office will bring you the specifics.

New source

Put a pin just north of Vancouver, B.C., on your map of caustic soda supply points.

Here in the city of North Vancouver, early in 1957, a new $11 million chlor-alkali plant will go on stream. At the plant's masthead will fly the colors of Hooker Chemicals, Ltd. The plant will be built and operated by Canadians, for industry in Canada.

The new Hooker plant will be Western Canada's first domestic source of caustic soda and chlorine. It will shorten supply lines, provide small but real freight savings, eliminate the need to pay duties on caustic and chlorine, and make for faster service.

If your company is already operating plants in British Columbia, or plans to build in this great, growing territory, this is a good time to discover how Hooker Chemicals, Ltd., can serve you.

Check items you'd like to receive:

☐ *Caustic Soda Buyer's Guide.* Lists advantages of 50% and 73% solutions; comparative costs; capacities of tank cars and other containers; useful shipping information.

☐ Technical data on caustic soda.

Need information on these other Hooker products used in the pulp and paper industry? Check here for technical data sheets:

☐ Chlorine, liquid
☐ Muriatic Acid
☐ Sodium Sulfide
☐ Sodium Sulfhydrate

Clip and mail to us with your name, title, company address.

HOOKER CHEMICALS PLASTICS

HOOKER ELECTROCHEMICAL COMPANY

1902 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.

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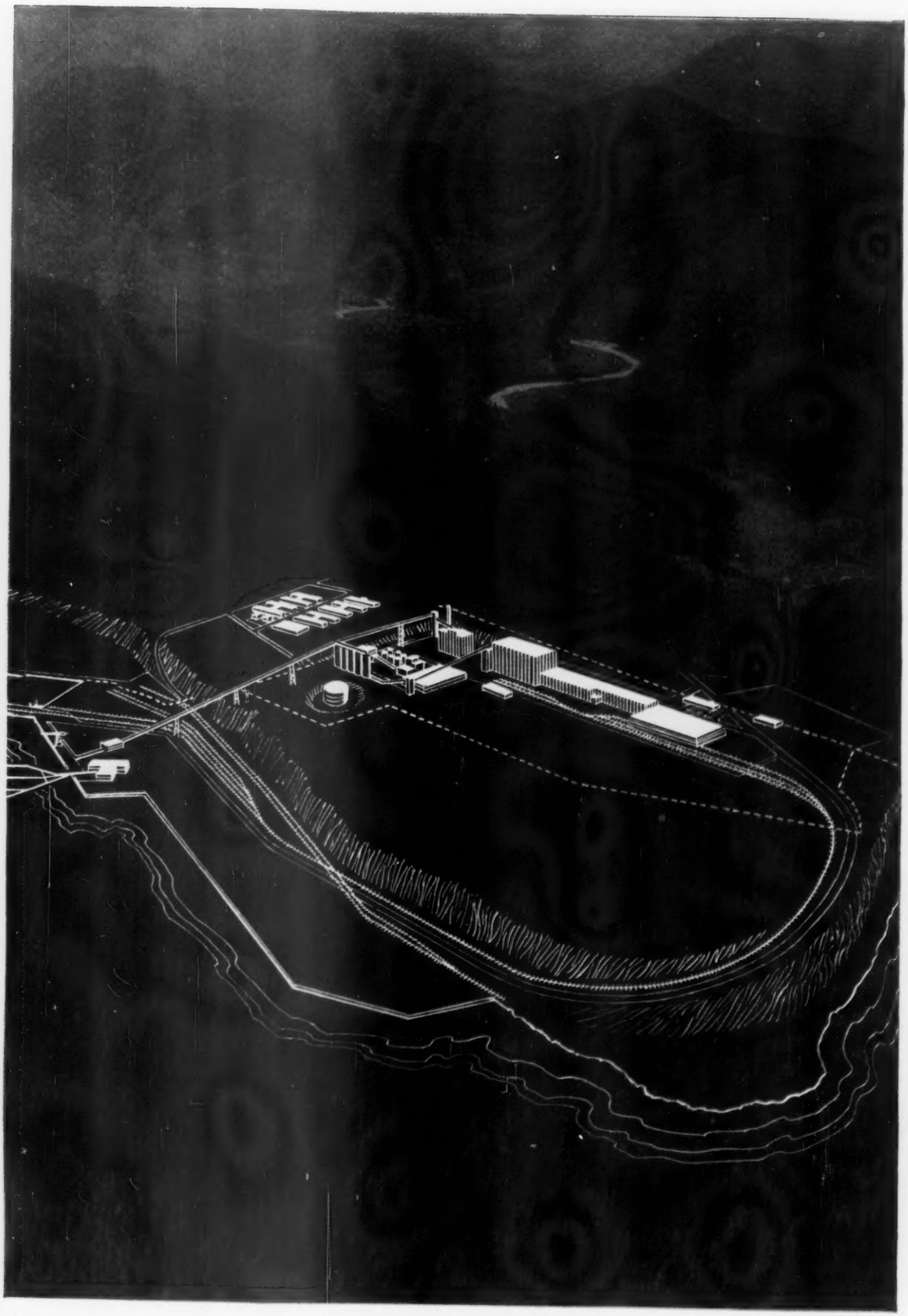


A BRAND NEW PULP

of uniform quality and workability

from British Columbia Forest Products Limited!

A brand new bleached Kraft market pulp will be available to papermakers by the end of 1957. This pulp will be of outstanding uniformity, quality and workability. And it will provide brightnesses of 88-90, suitable for high quality papers.

To provide this new pulp, British Columbia Forest Products Limited is building a $38,000,000 pulp mill at Crofton, B. C., on the southeast coast of Vancouver Island. This mill is rated at 425 tons per day.

To insure brightness usable for fine papers, the Crofton plant will be a multiple-step bleach plant of the latest design, including chlorine dioxide.

Conservation and forest utilization will be strictly observed in the operation of the new mill. Sawmill chips, logging salvage and conventional pulp logs will be utilized. This program continues the policy of the industry to assure a perpetual wood supply.

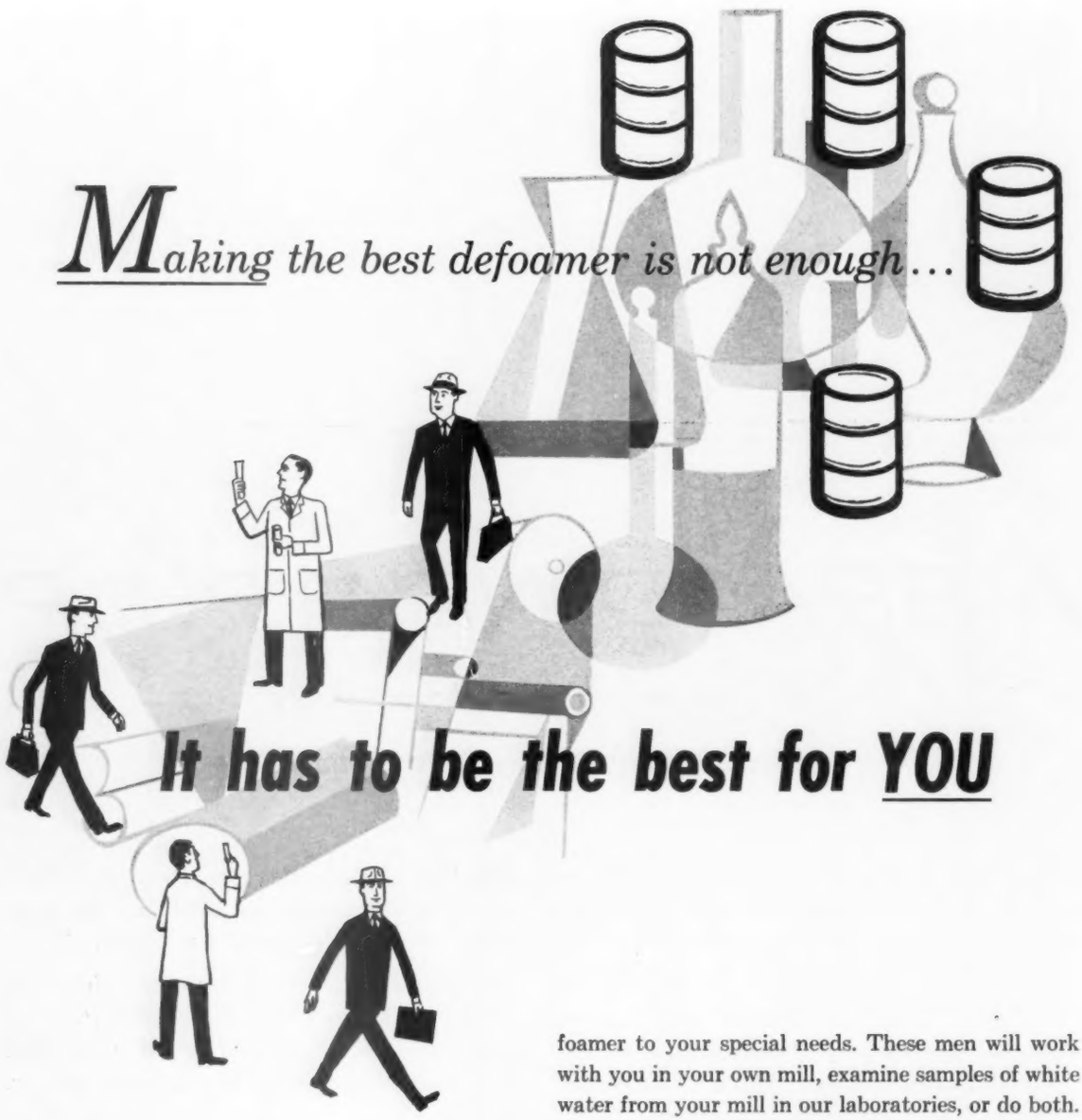
Mead Pulp Sales, Inc. has been named exclusive distributor for Crofton Kraft bleached pulp. When this pulp is marketed in late 1957, it will enable Mead to offer all essential grades of pulp to the industry.

Plan now to take advantage of this new bleached pulp supply. Additional details about Crofton Kraft, the new Crofton mill or existing Mead-marketed pulps are available on request.

MEAD PULP SALES, INC. *Distributors of wood pulp*
Bleached and Unbleached Chemical and Mechanical Wood Pulp

230 Park Avenue, New York 17 • 20 North Wacker Drive, Chicago 6
118 West First Street, Dayton 2 • 1504 Sherbrooke Street, West, Montreal, Canada

MEAD
pulp



Making the best defoamer is not enough...

It has to be the best for YOU

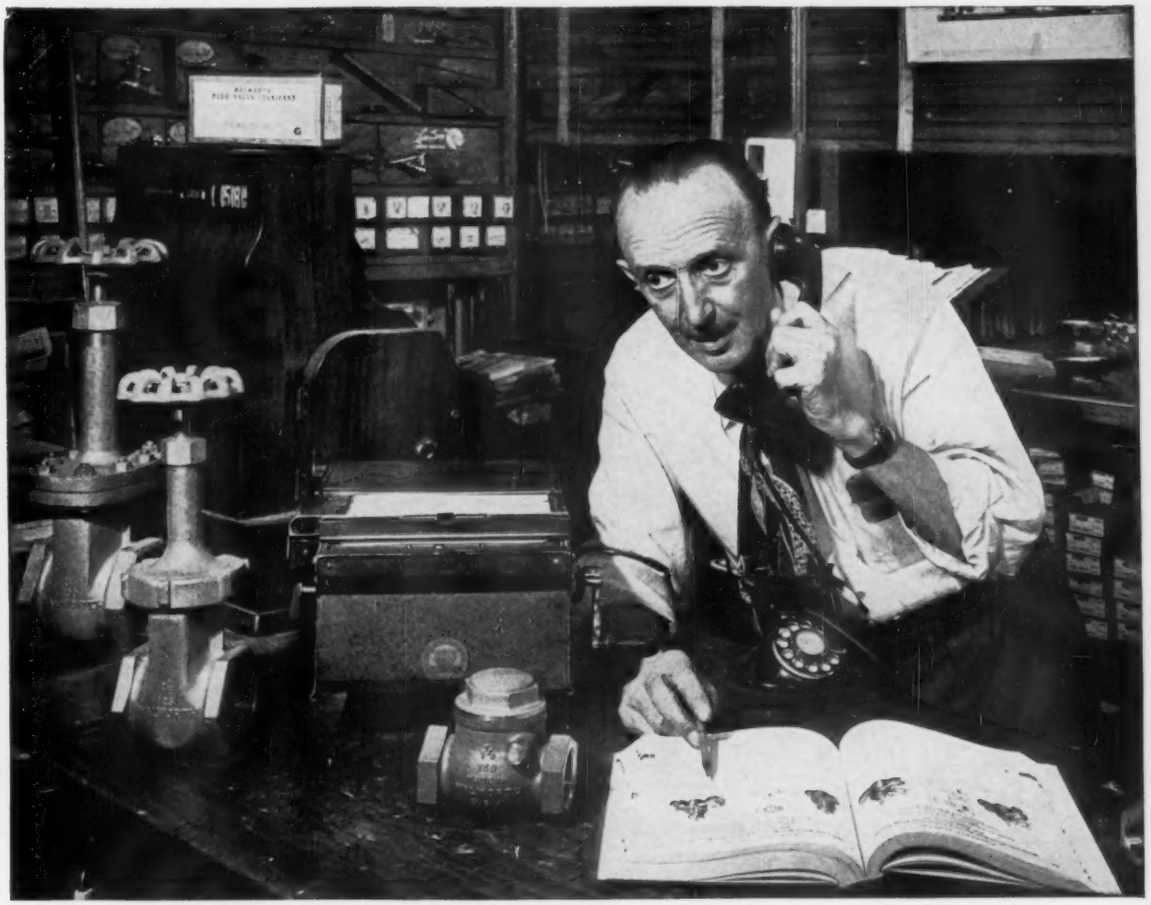
Every paper mill must control foam—with the greatest possible efficiency—at the lowest possible cost. And since each mill differs so widely from every other mill, Nopco's Paper Division spares no effort to make certain we have a defoamer—whether paste, liquid, or flake—that will effectively, economically control foam in *your* mill.

But making the best defoamers is not enough. Nopco's technical staff has the breadth of experience that can be invaluable to you in fitting the right defoamer to your special needs. These men will work with you in your own mill, examine samples of white water from your mill in our laboratories, or do both.

You can't be sure you've attained *maximum defoaming efficiency at the lowest cost per ton* until you have the best "team" in the business, the Nopco technicians, prescribe from the widest range of defoamers in the business—the Nopco defoamers. Write today for a free booklet on Nopco defoamers. Nopco Chemical Company, Harrison, New Jersey.

NOPCO

PLANTS: Harrison, N. J.
Cedartown, Ga. • Richmond, Calif.
London, Canada



*Fictitious name used to typify over 400 Walworth Distributors

Here's why it pays to do business with distributors like Mr. Hansen*

Andy Hansen is typical of Walworth Distributors throughout the nation. He has been a distributor of Walworth Valves and Fittings for years. Like Andy, the Walworth Distributor in your area provides these services and savings:

He reduces your inventory costs. He's aware of the valve and fitting needs peculiar to his area. He stocks the products that will best serve your needs. Deliveries are always prompt and economical – emergency orders can generally be delivered within hours.

He offers you application and engineering assistance. His technical experience can be invaluable in solving your particular problems. He has 50,000 Walworth products at his disposal. You can be sure that the items he recommends are exactly right for the job.

He is a double guarantee. His business depends upon providing you with the very finest products and unsurpassed service. Every valve and fitting is backed by his own reputation and that of Walworth – a complete line manufacturer.

There's a Walworth Distributor near you ready to help. Call on him today.

WALWORTH

valves . . . pipe fittings . . . pipe wrenches

60 East 42nd Street, New York 17, N. Y.

Walworth Company of Canada, Ltd., Toronto

Quality Control at Eastex Assures a Better Product

Some things are BEST when used *Fresh!*

A 750-foot flume divides the Eastex wood yard, enabling the mill to work from two piles rather than one. Under normal conditions, no log remains in storage more than 28 days.

Wood fiber, as you know, begins to deteriorate the moment the tree is cut. So, the *sooner* the pulp log is put into production . . . the better the pulp quality. The systematic wood pile rotation at Eastex is one of the many steps in a planned program of Quality Control . . . another reason why the name Eastex is highly regarded by those who demand a quality product.

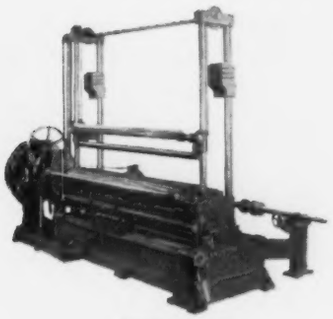
EAST TEXAS *Pulp and Paper Company*

GENERAL SALES OFFICE
P. O. Box 816, Silsbee, Texas
Telephone EVergreen 5-3711

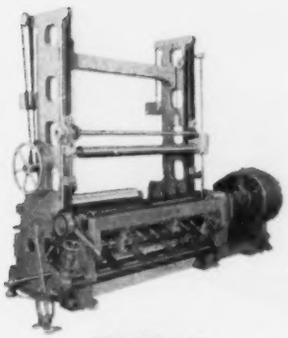
EASTERN SALES OFFICE
122 East 42nd St., New York City, N. Y.
Telephone OXford 7-2980

WESTERN SALES OFFICE
1003 Builders Bldg., Chicago, Ill.
Telephone RAndolph 6-1068

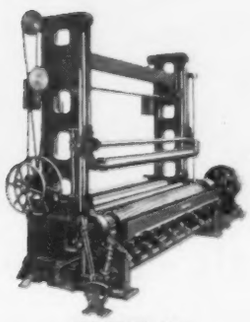
LANGSTON SLITTERS & WINDERS



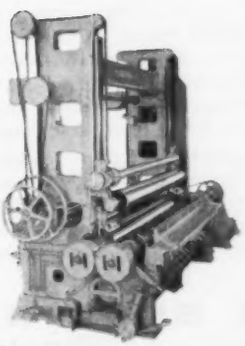
MODEL AA



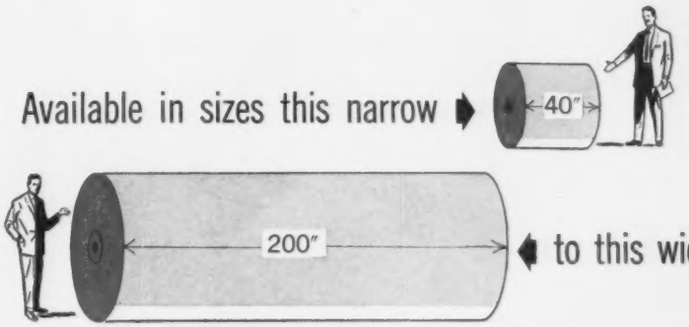
MODEL BA



MODEL CA



MODEL DA



The famous Langston shear-cut slitters cut all weights and grades of paper and paperboard—sharpening themselves as they run. They cut like scissors instead of a knife. Clean-cutting, they keep dust to a minimum. Assure square edges on sheet, clean rolls, and a clean plant. Shear-cut slitters are standard equipment on Langston Slitters & Winders without special order or extra charge. Various types of drive are available, depending upon the desired operating speed and the materials to be handled. Write for specific information on the size machine you need. SAMUEL M. LANGSTON CO., CAMDEN 4, N. J.

SPECIFICATION TABLE

	MODEL AA	MODEL BA	MODEL CA	MODEL DA	MODEL DH
Widths	40, 50, 60 and 72″	62, 72, 82 and 92″	82 to 122″	82 to 168″	100 to 200″
Speeds to	1500 fpm	2000 fpm	2000 fpm	3000 fpm	3500 fpm
Max roll dia	28, 36 or 42″	40, 50 or 60″	40, 50, 60 or 72″	40, 50, 60 or 72″	72″
Min cut	¾″	1 9/16″ stand 1⅜″ spec	2⅛″ stand 1½″ spec	3″ stand 1½″ spec	3½″ stand
Winding drums dia	8 7/16″	9½″	11″	14″	18″
Idlers dia	3⅞ or 6¼″	6⅜ or 9 7/16″	8½ or 10¼″	8½, 10¼ or 12½″	10¼, 14 or 18″
Cutter shaft dia	3″	4⅝″	5½″	7⅛ and 8¼″	8¼″
Pressure roll dia	3 or 4½″	5⅜ or 6⅞″	7½ or 9⅜″	8⅜ or 10⅜″	10⅜″
Weight	9000 lb (50″ mach)	17,000 lb (72″ mach)	23,000 lb (102″ mach)	36,000 lb (122″ st)	60,000 lb (160″)

LANGSTON *Leadership...by design*

TORRINGTON SPHERICAL ROLLER BEARINGS GIVE YOU THESE FEATURES

- inherent self-alignment
- conformity of rollers to races
- positive roller guidance
- land-riding bronze cages
- integral flange for stability
- maximum radial and thrust capacity
- long, smooth service life
- even load distribution

Mated perfectly ~ for life!

Make a point to notice the roller end and center guide flange in a Torrington Spherical Roller Bearing. The perfect mating there means a smoother, longer bearing life.

Roller end and flange surfaces alike are ground to a common spherical radius centered on the common vertex of bearing axis and roller axis. Under all load conditions, the rollers bear lightly but constantly against this flange. This guides the roller positively with minimum friction and prevents skewing. Stress concentrations leading to early failure are avoided, so the bearing will serve you many good turns longer.

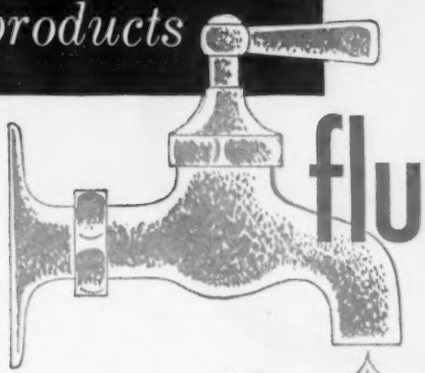
This is the kind of feature Torrington builds into its bearings out of its experience with all major types serving in all kinds of equipment. Care for such details is matched only by our care in mating the *right* bearing to the *right* job. In this, your Torrington representative is an expert: call on him when you need help. *The Torrington Company*, South Bend 21, Ind.—Torrington, Conn.

TORRINGTON BEARINGS

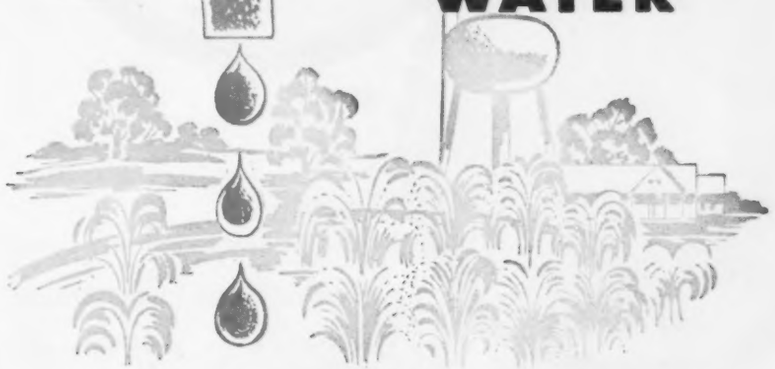
District Offices and Distributors in Principal Cities of United States and Canada

SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • NEEDLE • BALL • NEEDLE ROLLERS • THRUST

SULPHUR
helps to create headline products



fluoridated WATER



Some communities will, some won't . . . adopt fluoridation of drinking water for the purpose of reducing tooth decay. The subject is hotly debated but one thing is certain: wherever fluoridation is adopted a derivative of Sulphur will enter the picture.

Several chemicals can be used for fluoridation but they all stem from hydrogen fluoride. To produce this gas, a fluoride-bearing mineral is reacted with sulphuric acid.

As today's Headline Products' are studied, it's significant that so many require for their production one or more derivatives of Sulphur.

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.
811 Rusk Avenue, Houston 2, Texas

Sulphur Producing Units • Newgulf, Texas • Moss Bluff, Texas • Spindletop, Texas • Worland, Wyoming

WOOD PULP
PAPER

Offices and representatives
in 60 cities in the United States, Europe,
Latin America, Africa, and Asia

BULKLEY DUNTON
ORGANIZATION
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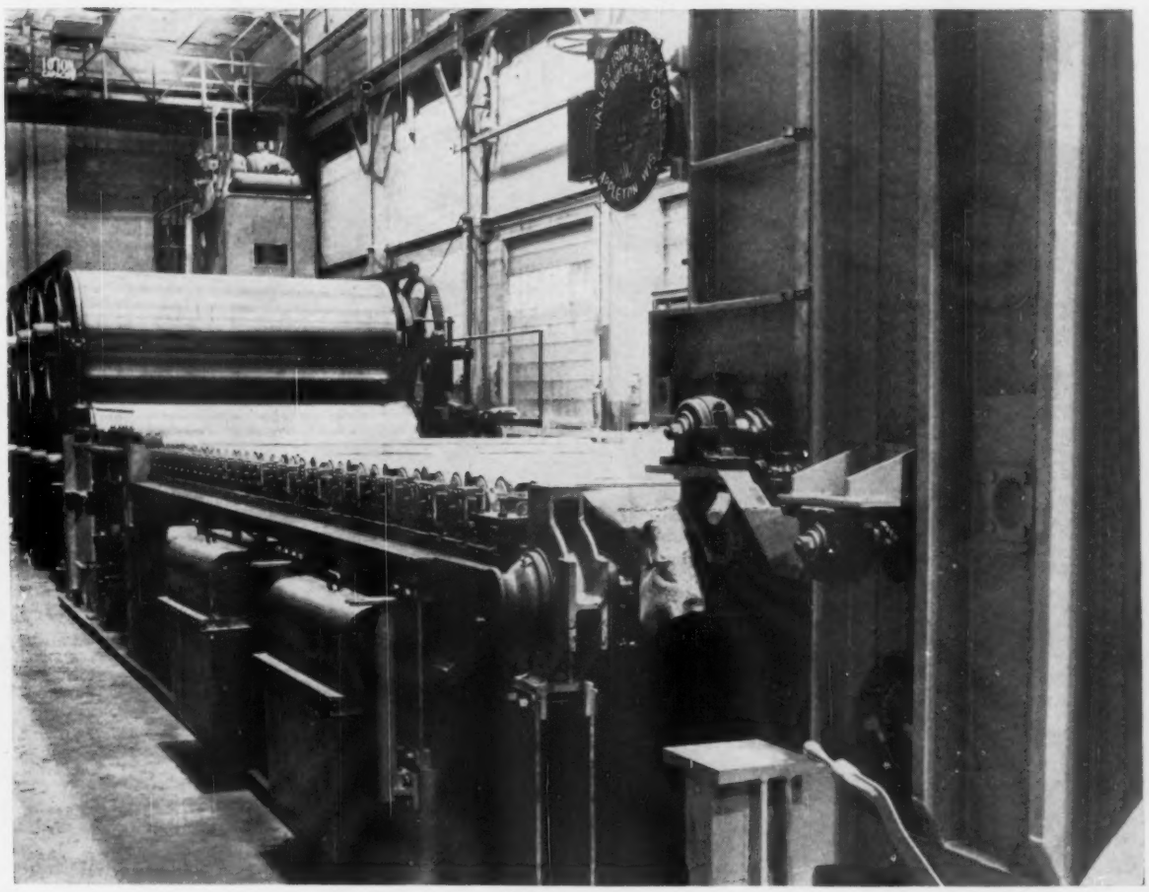
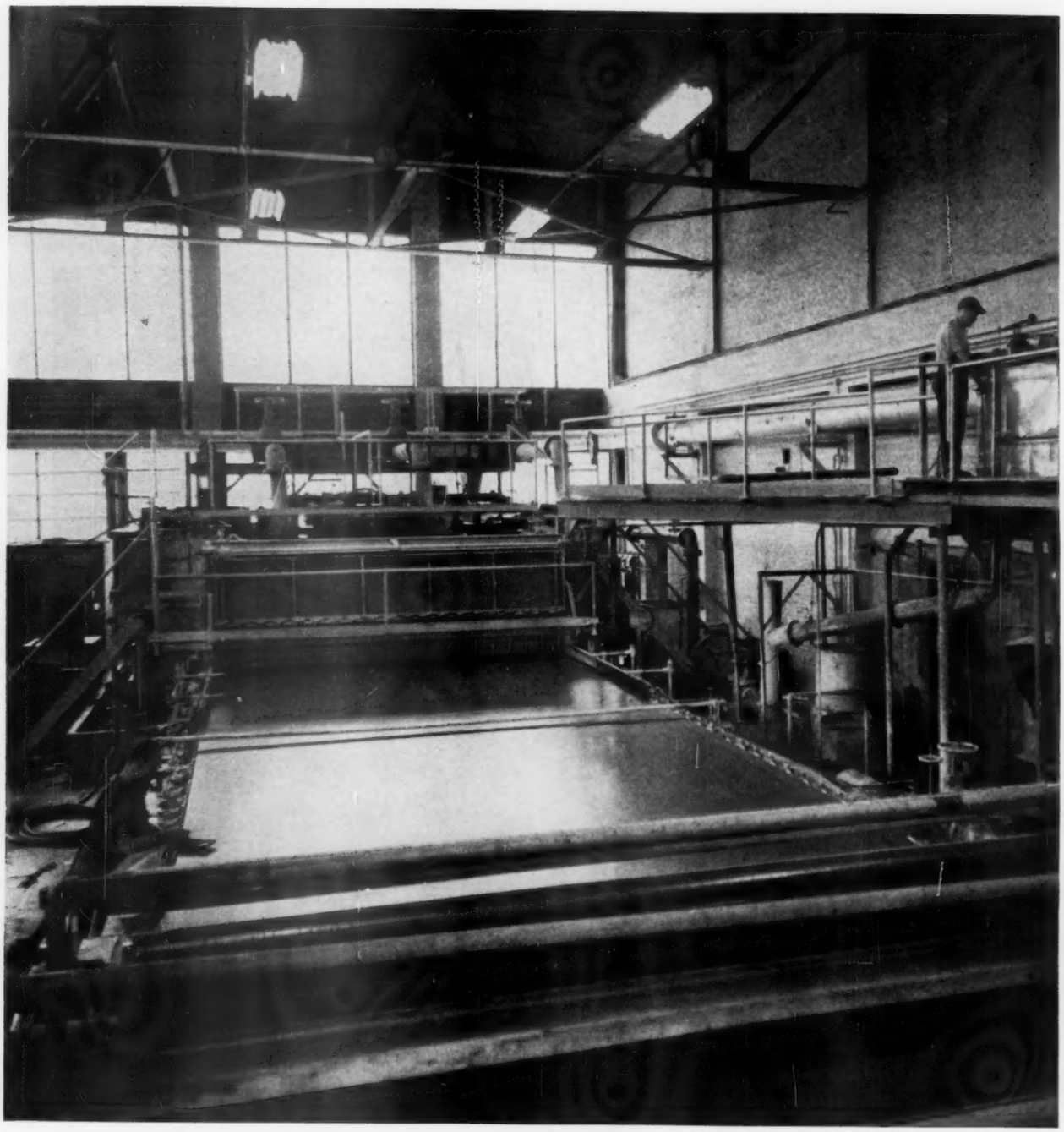
BULKLEY DUNTON CELLULOSE EXPORTS, INC. • BULKLEY DUNTON, LTD. • BULKLEY DUNTON A/B
BULKLEY DUNTON PAPER (FAR EAST) CO., INC. • HEMISPHERE PAPER CO., S.A. • BULKLEY DUNTON PROCESSES, INC.
In New England—CARTER RICE STORRS & BEMENT

another
PAPER MACHINE REBUILD.....



completely designed,
engineered and built by... **VALLEY**

VALLEY IRON WORKS CO. APPLETON, WISCONSIN
Canadian Representatives: Pulp and Paper Mill Accessories Ltd., P.O. Box 903, Station "O" Montreal 9, Quebec



REPUBLIC

World's Widest Range of Standard Steels

CLEAN-UP AND MAINTENANCE TIME CUT IN HALF

Allied Paper Corporation's conversion to stainless steel pays off in cleanliness, uniform quality, minimum maintenance, reduced costs . . . . . .

Allied Paper Corporation operates three pulp-blending and paper mills at Kalamazoo, Michigan, producing a complete line of coated and uncoated book papers, and coated photographic papers.

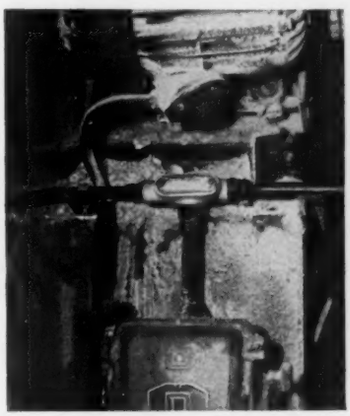
Faced with the common industry problem of high operating and material-costs and the ever-present danger of losing a batch of quality stock due to inclusion of corrosion or other contaminating matter, Allied inaugurated a conversion program. Older equipment, made from less versatile materials, is systematically being replaced with stainless steel, thus assuring extreme cleanliness, and safeguarding product quality.

Although the program of replacing with stainless is only partially completed, Allied is already enjoying a 50% reduction in their weekly clean-up and maintenance time.

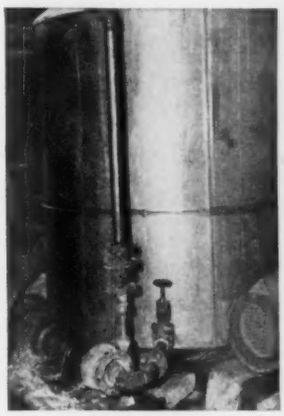
The reason? Stainless steel is so easy to clean and keep clean. Usually, a simple flushing with water or diluted acid solution brings stainless back to sparkling cleanliness. Another reason is the fact that stainless steel is solid. There's no applied surface to crack, chip, flake or peel. Its smooth, hard, sanitary surface offers little foothold for contaminants. Stainless provides the highest resistance to corrosion of any commercial metal.

These are but a few advantages that only stainless steel can give you. But, don't forget its "bonus benefits": high strength, heat resistance, abrasion resistance, eye appeal, long life, ease of fabrication, low ultimate cost.

Selection of the proper type of stainless steel is extremely important. Republic—world's largest producer of alloy and stainless steels—will help you make that selection. Our field metallurgists are ready to work with you and your equipment-supplier in applying the many available Republic ENDURO® Stainless Steel analyses to best advantage. There's no obligation.



CUT MAINTENANCE COSTS OF ELECTRICAL RACEWAYS. In this pulp mill, Republic Dekoron®-Coated Electrical Metallic Tubing resists the corrosive action of fumes and steam. This easily installed electrical raceway gives you the double protection of a polyethylene coating over a galvanized finish. Moisture-tight, corrosion-protected joints are made by wrapping the threadless connectors and couplings with plastic tape. Dekoron-Coated E.M.T. costs less because it lasts longer. Also available in rigid conduit sizes. Booklet DEK-1 has complete facts. Mail the coupon.



REDUCE REPLACEMENT AND MAINTENANCE COSTS with a corrosion-resistant piping system of Republic ELECTRUNITE® Stainless Steel Pipe. In photo at left, ELECTRUNITE Stainless Steel Pipe, Type 316, is used to carry off highly corrosive alum solution from stainless mixing tank. Stainless offers high resistance to corrosion; provides positive protection against contamination and discoloration. Republic Stainless Steel Pipe's great strength, resistance to high temperature, pressure, and physical damage make it ideal for fluid-materials handling. Send coupon for more facts.

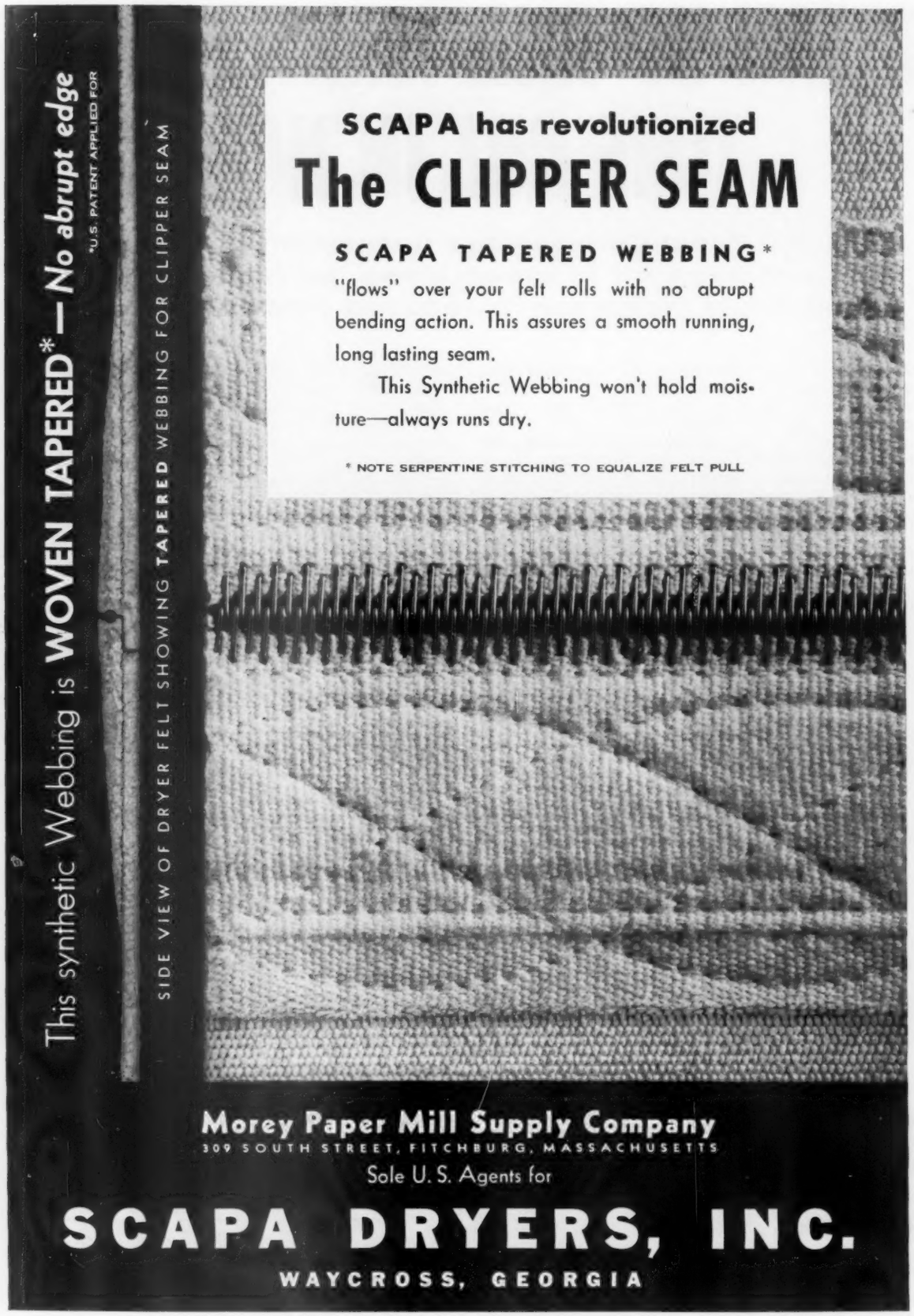
STEEL

and Steel Products

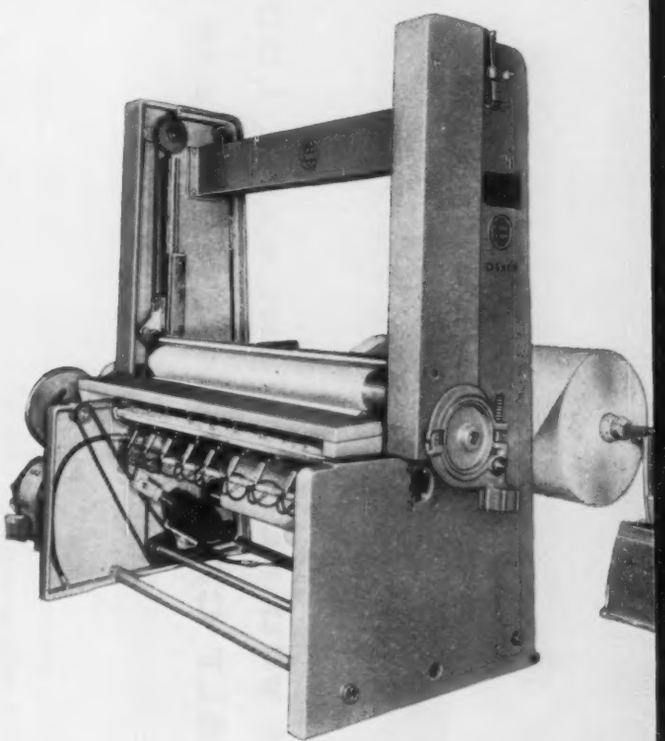
REPUBLIC STEEL CORPORATION
Dept. C-3206
3206 East 45th Street • Cleveland 27, Ohio

☐ Have a stainless steel metallurgist call.
Send more information on:
☐ ENDURO Stainless Steel ☐ Dekoron-Coated E.M.T.
☐ ELECTRUNITE Stainless Steel Pipe

Name_____ Title_____
Company_____
Address_____
City_____ Zone____ State_____


This synthetic Webbing is WOVEN TAPERED*—No abrupt edge
*U.S. PATENT APPLIED FOR
SIDE VIEW OF DRYER FELT SHOWING TAPERED WEBBING FOR CLIPPER SEAM
SCAPA has revolutionized
The CLIPPER SEAM
SCAPA TAPERED WEBBING*
"flows" over your felt rolls with no abrupt bending action. This assures a smooth running, long lasting seam.
This Synthetic Webbing won't hold moisture—always runs dry.
* NOTE SERPENTINE STITCHING TO EQUALIZE FELT PULL
Morey Paper Mill Supply Company
309 SOUTH STREET, FITCHBURG, MASSACHUSETTS
Sole U. S. Agents for
SCAPA DRYERS, INC.
WAYCROSS, GEORGIA

new Black-Clawson
TD-6
Slitter-Rewinder



SIMPLICITY

With a Black-Clawson Model TD-6 Slitter-Rewinder you get a modern machine that's simple to operate. Threading is easy. Slitters are positioned and loaded pneumatically. Controls are pneumatic and located at front of machine. Belt take-ups are easily adjusted —rewind shaft removal is no problem.

SAFETY

The TD-6 is safe to operate. All drive belts are enclosed. There's no loose counterweighting. Winder drive has air brakes.

SAVINGS

You get good tight rolls of paper, film, foil or board. Riding roll overdrive assures tight starts. Deep groove ball bearings prevent end play in rewind shaft. Bearings, chains and many parts are readily available standard commercial items.

TD-6 Specifications

- 6" drums 42" rewind capacity
- 42", 52", 62", 72" and 82" widths
- Speeds to 2000 fpm

Slitter-Rewinder
Web Length and Horsepower Calculator
Want one? Just fill in the coupon, attach to your company letterhead, and mail to the Dilts Division.

The Black-Clawson Company
Dilts Division · Bennett & Haskell Sts. · Fulton, N. Y.

Please send me one of your new Slitter-Rewinder Calculators.

NAME _____

TITLE _____

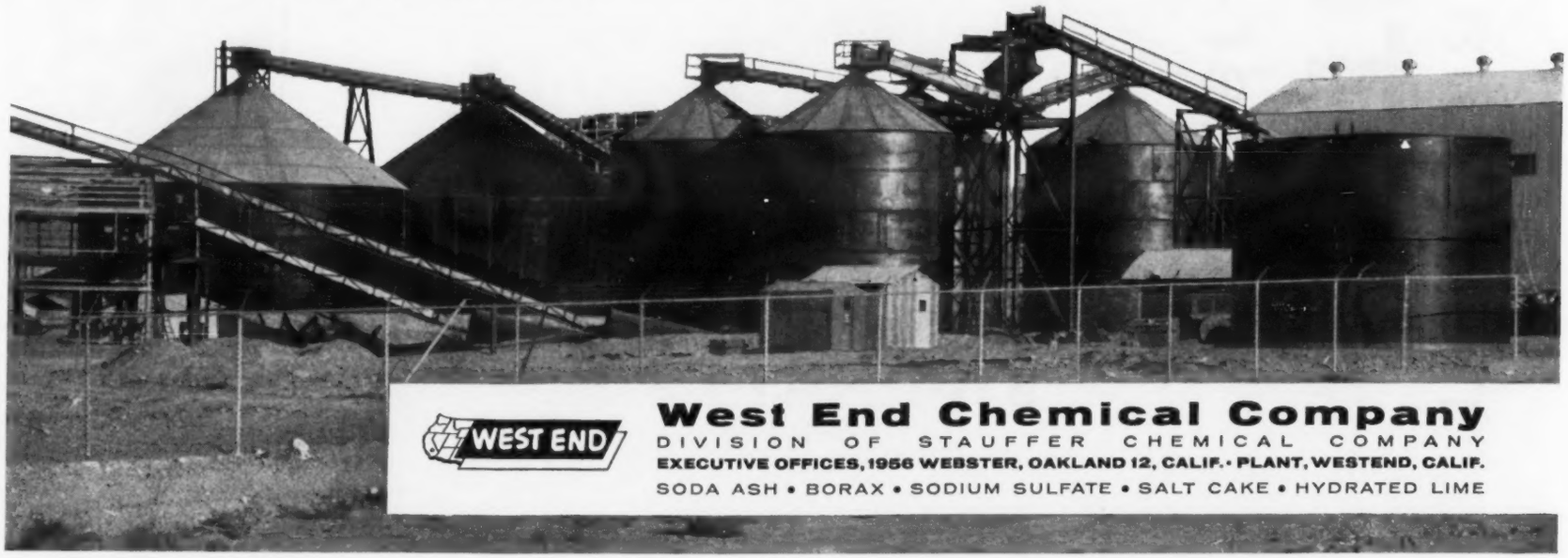
COMPANY _____

ADDRESS _____

CITY AND STATE _____

...if you needed an extra 1,000 tons of West End SALT CAKE today, we'd have it for you...

Our customers generally schedule their requirements far in advance—sometimes for years—but on those occasions when additional quantities are needed unexpectedly, West End has the storage facilities to meet any emergency requirements promptly and easily.



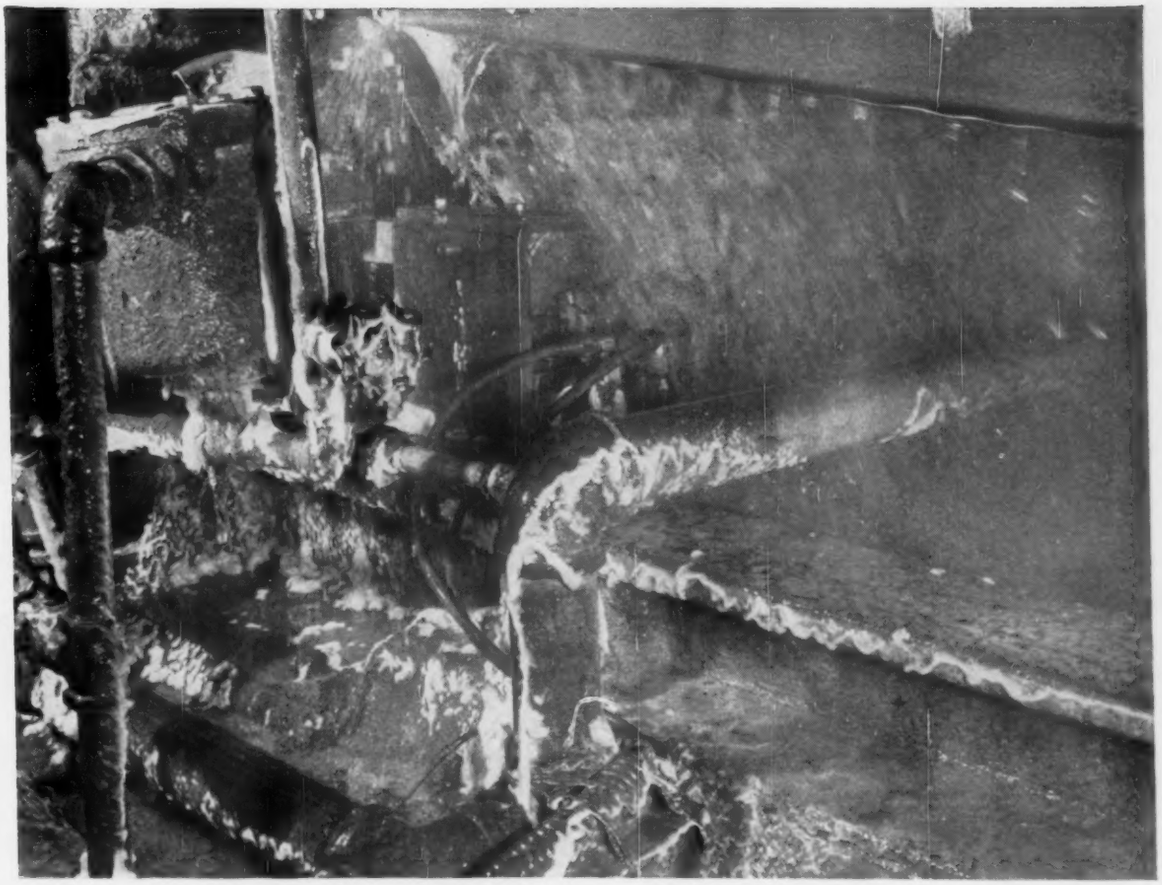
WEST END

West End Chemical Company

DIVISION OF STAUFFER CHEMICAL COMPANY

EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIF. · PLANT, WESTEND, CALIF.

SODA ASH • BORAX • SODIUM SULFATE • SALT CAKE • HYDRATED LIME



A GOOD DOCTOR is operating here —

a Lodding Hydraulic Oscillating Doctor

no valve mechanism, fluid reservoir or pump required.

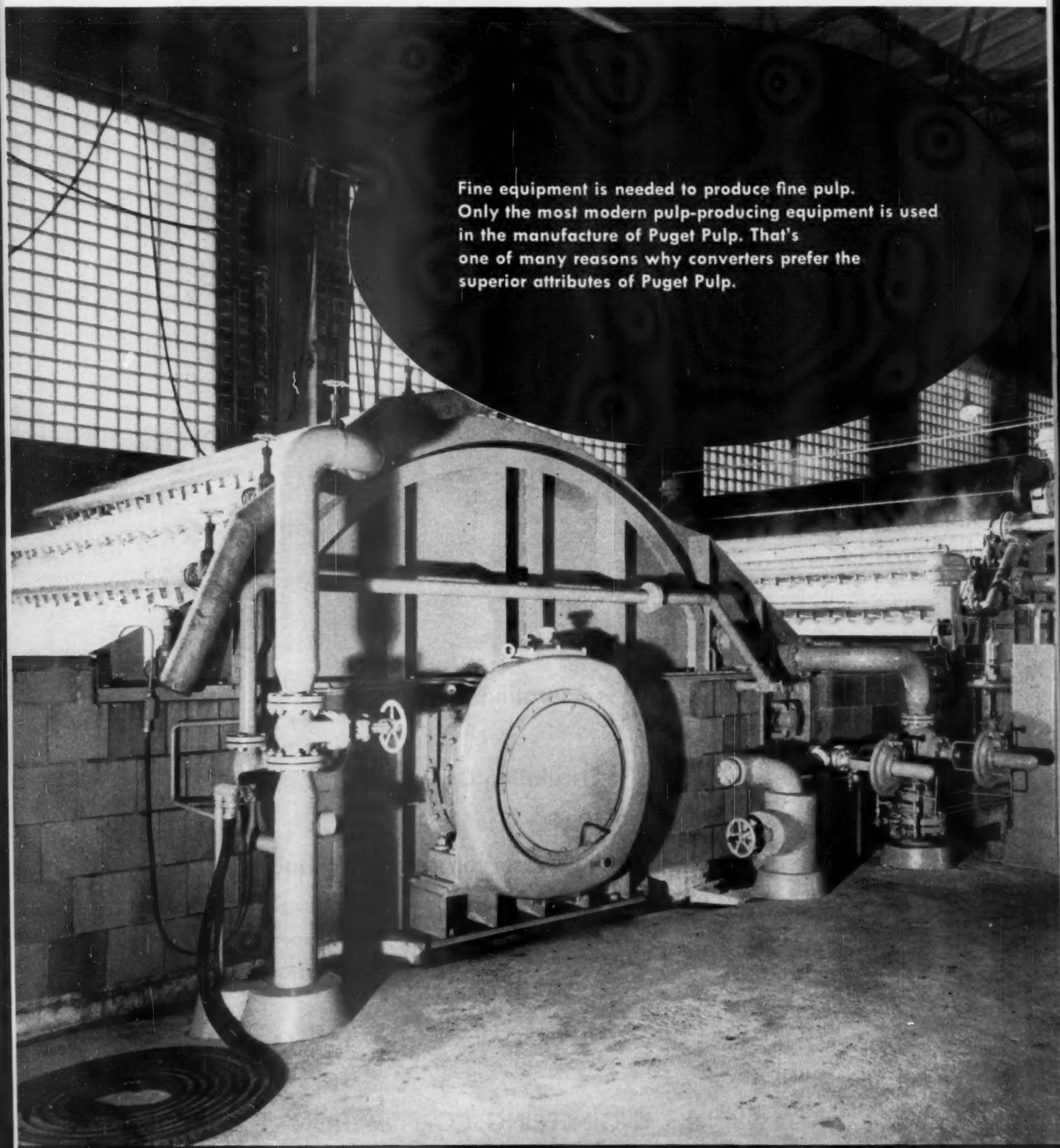
Banish the danger of scored rolls.

Be safe — specify LODDING.

LODDING ENGINEERING CORPORATION

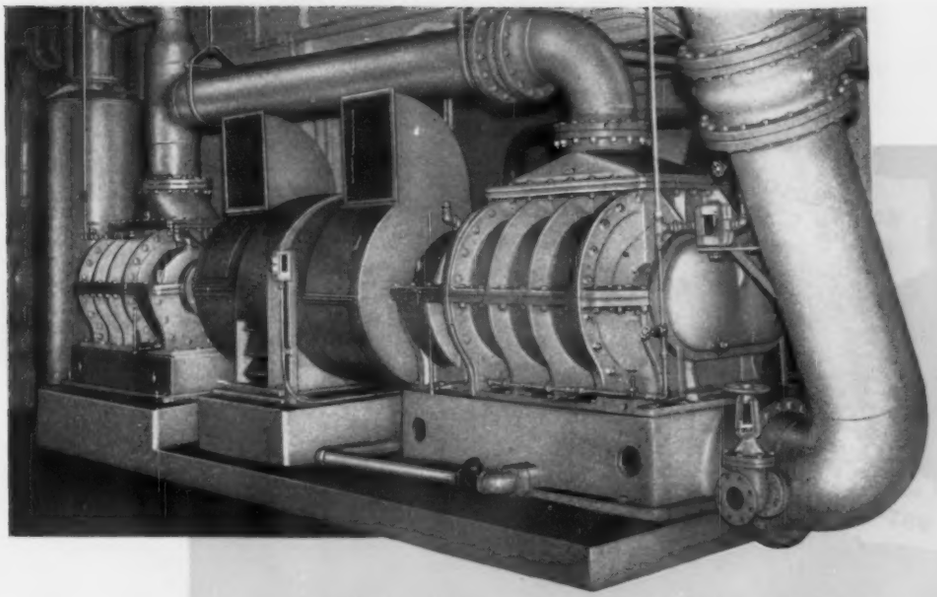
WORCESTER • MASSACHUSETTS

Only the Best goes into Puget Pulp



Fine equipment is needed to produce fine pulp.
Only the most modern pulp-producing equipment is used
in the manufacture of Puget Pulp. That's
one of many reasons why converters prefer the
superior attributes of Puget Pulp.

PUGET SOUND
PULP AND TIMBER CO.
BELLINGHAM, WASHINGTON



For the world's largest Yankee tissue machine...

R-C Vacuum Pumps keep production rolling at 3000 fpm

At Crown Zellerbach Corporation's St. Helens mill in Oregon, the world's largest Yankee tissue machine, with a 258-inch wire, is producing 100 to 120 tons per day at a speed of 3000 fpm.

To provide the required vacuum for the pressure roll, suction wire boxes, wringer roll, suction couch, pickup and felt conditioners, there are seven Roots-Connersville vacuum pumps to supply approximately 33,000 cfm of air at 10 to 20" Hg vacuum.

Five important operating factors have proved the performance of these R-C Positive Displacement Vacuum Pumps:

- *Reduced horsepower at higher speeds* (600 rpm and up) creates power savings up to 25% and far lower first cost of motors.
- *Single-stage or two-stage units* in capacities for all requirements.
- *Proved reliability and low maintenance* with no internal contacts or excessive wear and freedom from down-time and maintenance.
- *Minimum sealing water* from 4 to 40 gpm, unaffected by water temperature.
- *Small floor space* with less expensive foundations and lower cost per cubic foot of capacity.

R-C Positive Displacement Vacuum Pumps purchased for this installation

- Two 16 x 40 single-stage pumps
- One 14 x 35 single-stage pump
- Two 20 x 40 x 20 x 16 two-stage pumps

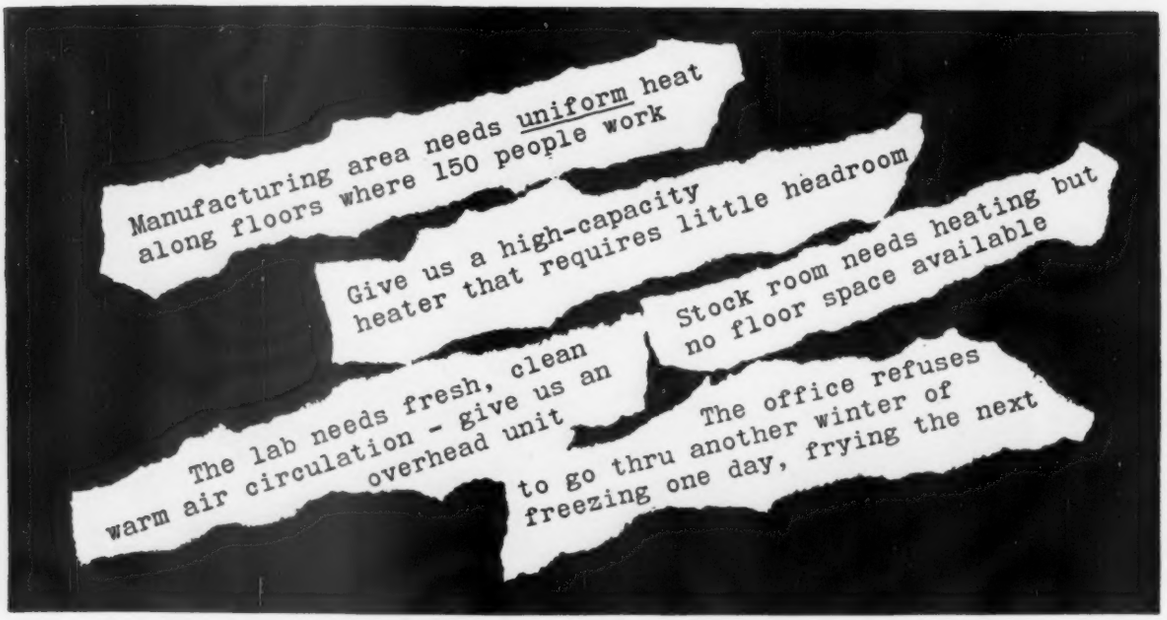
The 14 x 35 single-stage unit is direct-connected to a special shaft extension from one of the 16 x 40 units to make a two-stage compound pump.

For evidence of how other leading industrial users benefit from these advantages, write for Bulletin 50-B-13.

ROOTS-CONNERSVILLE BLOWER

A DIVISION OF DRESSER INDUSTRIES, INC.

1257 Willow Ave., Connersville, Indiana. In Canada—629 Adelaide St., W., Toronto, Ont.


Manufacturing area needs uniform heat along floors where 150 people work
Give us a high-capacity heater that requires little headroom
Stock room needs heating but no floor space available
The lab needs fresh, clean warm air circulation - give us an overhead unit
The office refuses to go thru another winter of freezing one day, frying the next

"BUFFALO" HEATING & VENTILATING UNITS MEET ALL YOUR NEEDS!

FILTERS—HEATS—VENTILATES This Highboy Unit hugs the wall, using little space — delivers makeup air from the outside thru filtered intake. Note fan bearing bowl on left for handy external lubrication.

LOW HEADROOM? Compact wall-mounted "Buffalo" Units deliver plenty of heat in cramped machinery areas. The secret — non-freeze coils of high heating surface, efficient "Buffalo" Fans to distribute the heat where you need it.

NO FLOOR SPACE? A "Buffalo" Lowboy mounted overhead is the answer. Exclusive "Buffalo" swivel outlets aim air accurately. Unit has filters, face and by-pass dampers and mixing box for fresh and return air.

IT PAYS TO BUY QUALITY!

For no-complaint heating and ventilation, season after season, there is no substitute for the engineering and manufacturing Quality that have always gone into "Buffalo" Unit Heaters. For contractors, this means "no-callback" customer satisfaction; for users, reliable, low-cost comfort and better working conditions. Write today for Bulletin 3704A for details. Capacities up to 35,000 cfm.

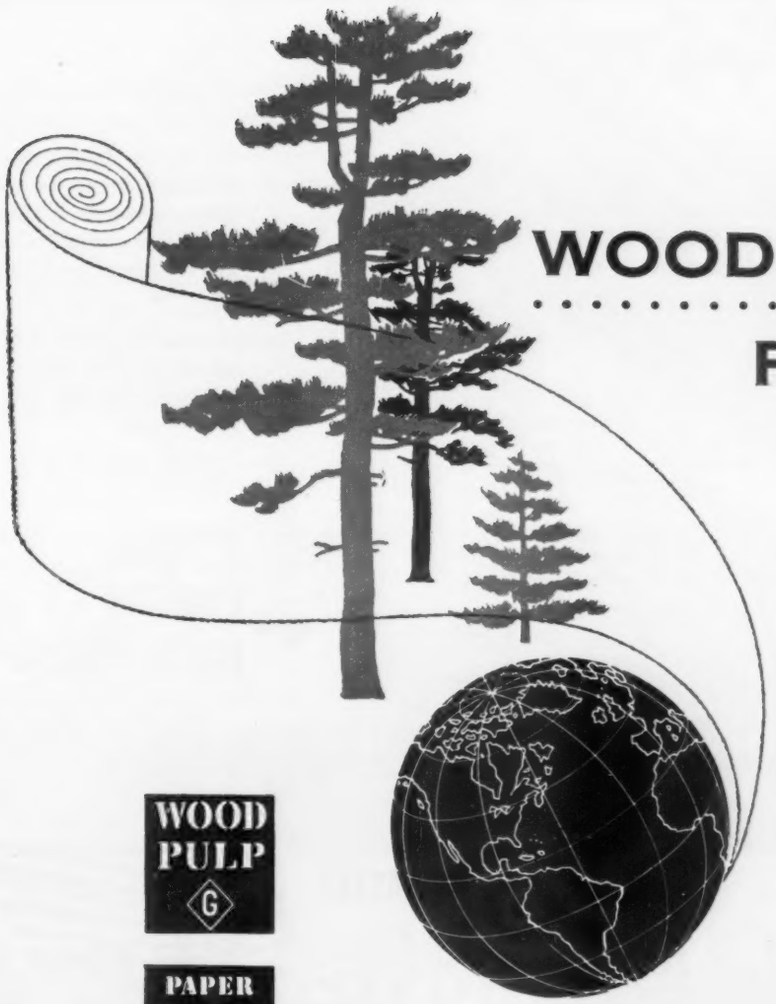
"Buffalo"

BUFFALO FORGE COMPANY

BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATINC AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING



WOOD PULP
PAPER

WOOD PULP G

PAPER EXPORT CNC

Established 1886

THE GOTTESMAN ORGANIZATION

PULP EXPORT CNC

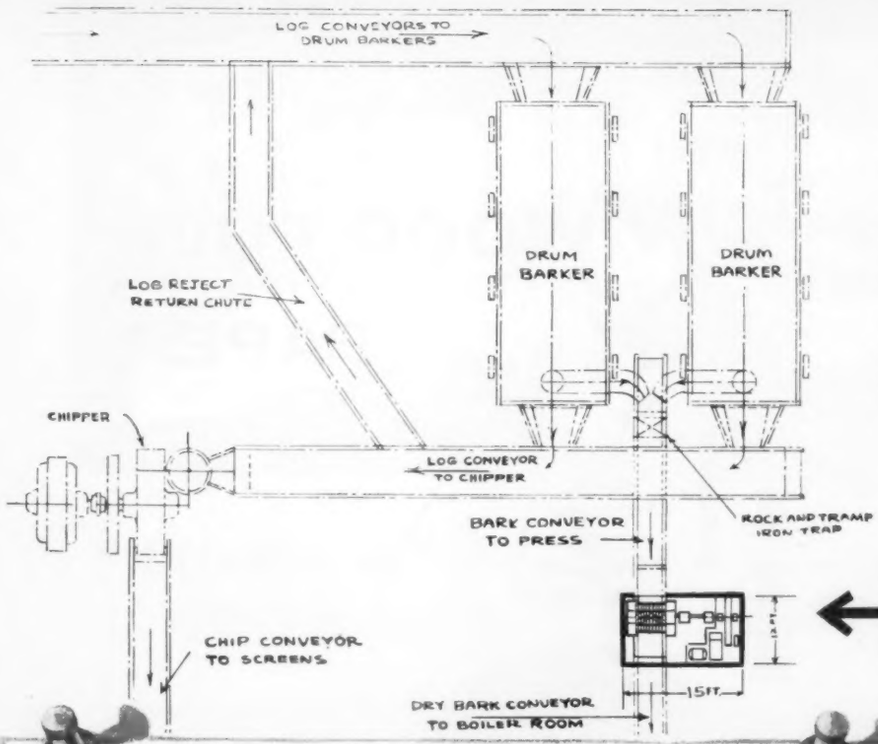
Gottesman & Company, Incorporated
Central National Corporation
Central National Commercial Company, Inc.

100 Park Avenue, New York 17, N. Y.

Gottesman & Company Aktiebolag, Stockholm, Sweden
Central National–Gottesman Limited, London, England

REPRESENTATIVES IN 55 LEADING WORLD MARKETS

THE FULTON ROLL PRESS FITS YOUR PRESENT WOOD ROOM

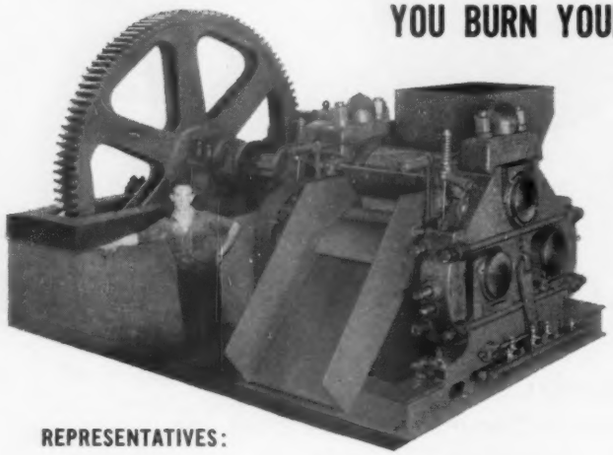


FULTON BARK PRESS

The Fulton "Double-Squeeze" process reduces the moisture content of wet bark from 70% to 47% — adds millions of BTU's hourly to the bark's heating value.

Let us demonstrate, on a sample of your own waste, at no obligation to you. Mail the coupon now.

IT CONVERTS WET BARK TO DRY FUEL... YOU BURN YOUR WASTE!



FULTON IRON WORKS CO. 1852 1957 FULTON 105 YEARS ST. LOUIS, MO., U.S.A.

REPRESENTATIVES:

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Appleton, Wisconsin

W. W. HENDERSON & SONS
P. O. Box 1085
Pensacola, Florida

E. V. PRENTICE COMPANY
2303 North Randolph Avenue
Portland 12, Oregon

HYDRAULIC MACHINERY COMPANY
1243 Darion Street
Montreal, Quebec
(Canada Licensee)

FULTON IRON WORKS CO.

Dept. PP-2, 4235 Duncan Ave., St. Louis 10, Mo.

Please send full details of the Fulton Roll Press. We are interested in a free test run of.....

.....

NAME.....

FIRM.....

ADDRESS.....

CITY..... ZONE..... STATE.....

Jones STOCKMASTER

For trouble-free, dependable service with superior results

Low in first cost, simple and inexpensive to service and maintain, the Stockmaster will give many years of trouble-free, dependable and efficient performance.

With a wide range of tackle available, it offers great flexibility and can be readily controlled to give a complete range of results—from intensive fibre development to full fibre length control—superior to other types of conical beating and refining equipment.

Write for Bulletin EDJ-1047

Jones

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

E. D. JONES & SONS COMPANY
Pittsfield, Massachusetts

IN CANADA: The Alexander Fleck, Ltd., Ottawa

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New York 20, N. Y.

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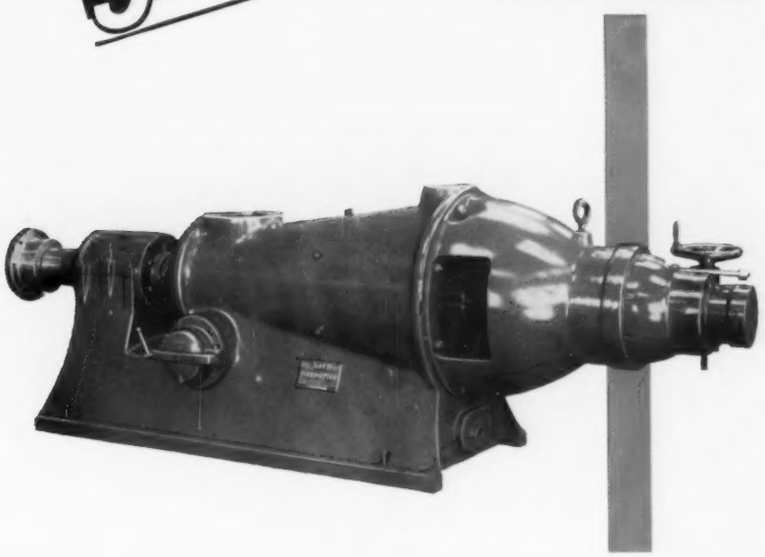
Jones FIBREMASTER



Paralleling the Stockmaster and the famous Jones High-Speed Refiner in its versatility and close control of stock characteristics, the Fibremaster has a capacity of twice the tonnage of the smaller machines.

Especially significant is its ability to do a superior job of **either beating or cutting**, and—in direct comparison with other so-called "beating refiners"—produce equal or better results with less power consumption. An ideal utility unit on all stocks from news to rag.

Write for Bulletin EDJ-1035A

Maximum Pulping and Complete Defibering

in half the time . . .

Unique feature of the Hi-Lo Pulper: two separate rotors — large-vaned Lo-speed (right) for thorough break-up and circulation; small-vaned Hi-speed for complete defibering.

Ideal for installation under dry end of paper machine for direct or conveyor feed of broke for repulping.

Jones

HI-LO PULPER

The Jones HI-LO Pulper is engineered to eliminate the compromise imposed by conventional single-rotor pulpers, between maximum circulation and complete defibering.

By employing two separate rotors, separately powered, the HI-LO has proved its ability to produce maximum pulping *and* complete defibering — even on wet-strength and other difficult materials — without exorbitant power.

Moreover, users report no cutting or degrading, or loss of tear, and considerable savings in time. Ask your Jones representative for details or write us for Bulletin EDJ-1063.

E. D. JONES & SONS COMPANY
Pittsfield, Massachusetts
BUILDERS OF QUALITY STOCK PREPARATION MACHINERY
IN CANADA: The Alexander Fleck, Ltd., Ottawa

Export Agents:
CASTLE & OVERTON, INC.
New York 20, N. Y.

Foreign Licensees:
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US RUBBER Roll Coverings

The Colossus of Providence

one of the factors in producing precision-perfect roll coverings.

In the Providence, Rhode Island, plant of United States Rubber, stands the world's most modern grinder for the world's largest paper mill rolls. So huge is this grinder that it crowns and finishes—to the most exacting tolerances—rolls as big as 60" in diameter, 30 feet long.

This grinder is only one of the many advanced technological and production facilities available to paper mills who specify U. S. Rubber Roll Coverings. Quick delivery and complete service are assured because the "U.S." factory in Providence is centrally located on major highways and the main line of a major railroad.

Contact a roll covering specialist. Get in touch with us at Rockefeller Center, New York 20, N. Y. In Canada, Dominion Rubber Co., Ltd.

US RUBBER Mechanical Goods Division

United States Rubber

HORTON ELEVATED TANK

stores water supply for

FIRE PROTECTION

at Rome Kraft

A 100,000-gal. Horton® elevated tank stores the primary water supply for the 1,518 sprinkler heads providing fire protection for the Rome Kraft Company plant at Rome, Georgia. Any time a sprinkler head opens, day or night, water is instantly available from the tank by gravity pressure.

In addition to the Horton elevated tank, CB&I also erected other welded steel plate structures at Rome Kraft, including four causticizing tanks, a foam tank and eight digesters.

Chicago Bridge & Iron Company can build welded steel plate structures for your plant that will meet the most rigid specifications. Write our nearest office for further information.

Chicago Bridge & Iron Company

Atlanta • Birmingham • Boston • Chicago • Cleveland • Detroit • Houston
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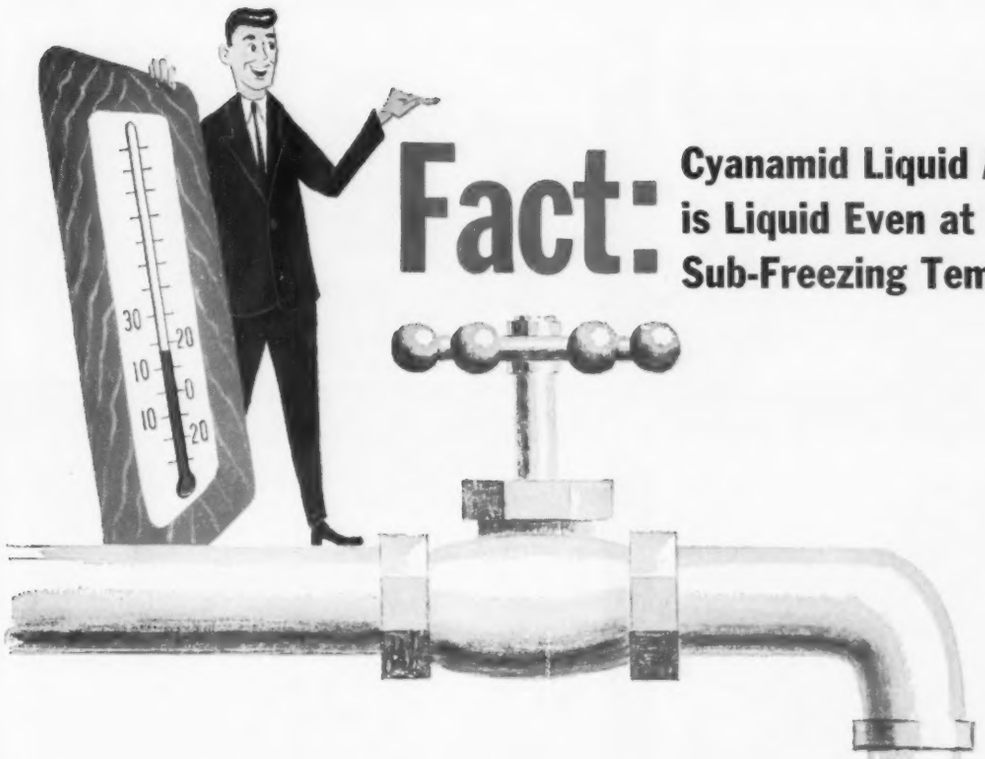
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

CB&I



Fact:

Cyanamid Liquid Alum is Liquid Even at Sub-Freezing Temperatures!

Conclusion:

In winter, Cyanamid Liquid Alum does not require continuous heating in transit or storage.

For many good reasons, Alum users across the country are converting to *Liquid* Alum. Year-round easy handling, lower costs and labor savings are the main advantages. Also, they get neater operation, better dispersion, more accurate control.

Are you considering a new liquid Alum installation ...or thinking of converting your present dry Alum operation? Cyanamid's experienced know-how can help in your planning. Just contact our office or local representative.

Did You Know

...that Alum was one of the first two pure chemicals known to man?

...that Alum was used by the Romans to fireproof their siege weapons?

...that money from Alum helped save Christendom from the Turks 500 years ago?

Some romantic details of Alum's history—and much down-to-earth technical data on its manufacture, properties and uses—are contained in Cyanamid's 43-page booklet, *Alum*. Request a copy.

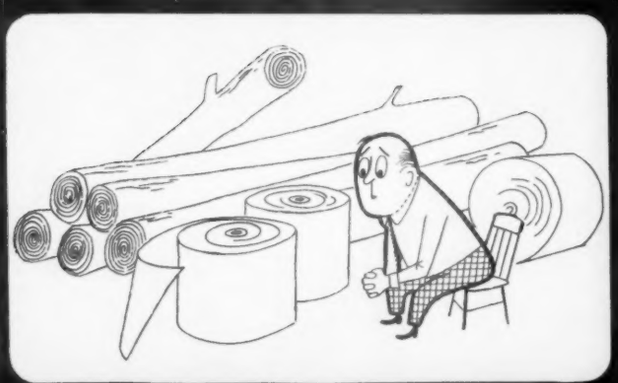
CYANAMID

AMERICAN CYANAMID COMPANY
PAPER CHEMICALS DEPARTMENT
30 Rockefeller Plaza, New York 20, N. Y.

In Canada: North American Cyanamid Limited
Toronto and Montreal

Planning a new mill?

Design and construction problems are piling up.



Sure, you have good engineers, but these problems are an added burden.

—and your staff just isn't big enough.

Solution: Call in Lummus with its army of expert engineers.

You'll get just the job you want at minimum capital investment.

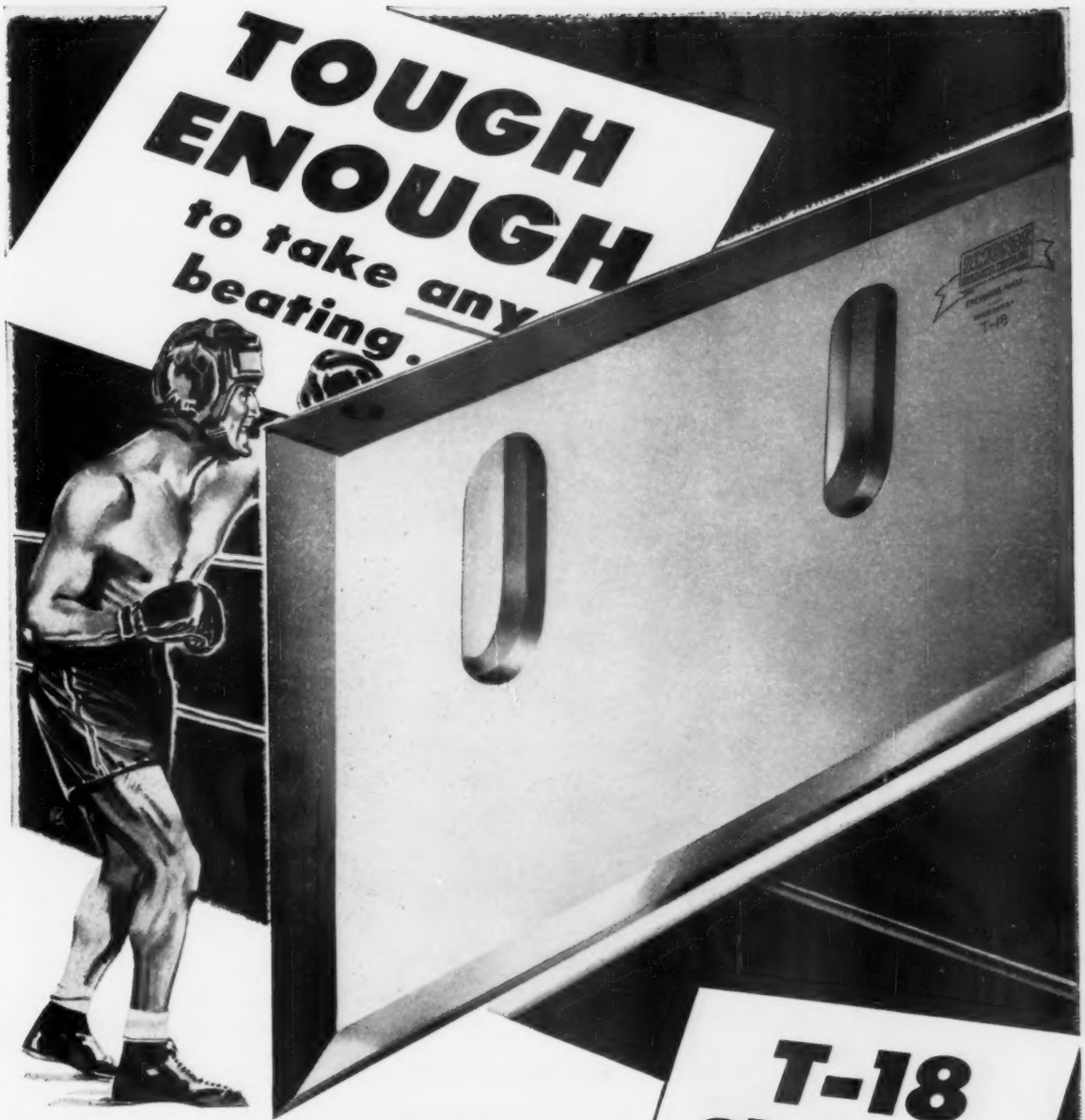
This is the situation in very simple terms. But the basic truth is there. Building a pulp and paper mill is more than a "do-it-yourself" project. Lummus has built over 700 processing plants throughout the world. When you are ready to build your next plant, you can call in thousands of trained men—without adding to your payroll—by calling in Lummus. And remember, your process "secret" is safe with half-century-old Lummus.

THE LUMMUS COMPANY
385 Madison Avenue, New York 17, N. Y.

LUMMUS

ENGINEERS AND CONSTRUCTORS FOR INDUSTRY

NEW YORK · CHICAGO · HOUSTON · THE HAGUE · LONDON · MONTREAL · PARIS



SIMONDS

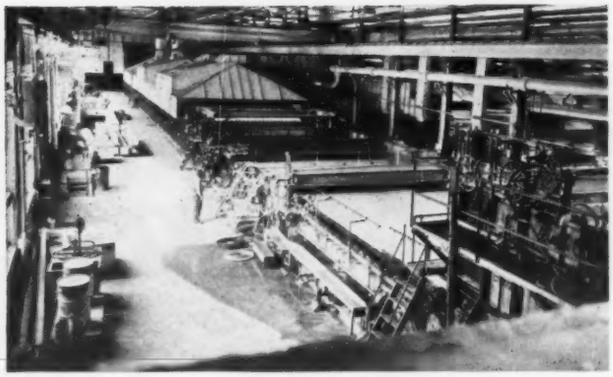
T-18 Chipper Knives

Chips aren't bruised and "beat-up" . . . they're not mashed and of uneven length . . . when they come out from under a Simonds T-18 Knife. But they *are* uniform in size, and that means they "cook" more quickly and evenly . . . make better-grade pulp.

Make sure you aren't losing money in your wood room. Equip all your chippers with these extra-tough knives of special Simonds T-18 Steel. They hold their cutting edge . . . hold your chip-output up and your sawdust-loss down.

Check your dealer today.

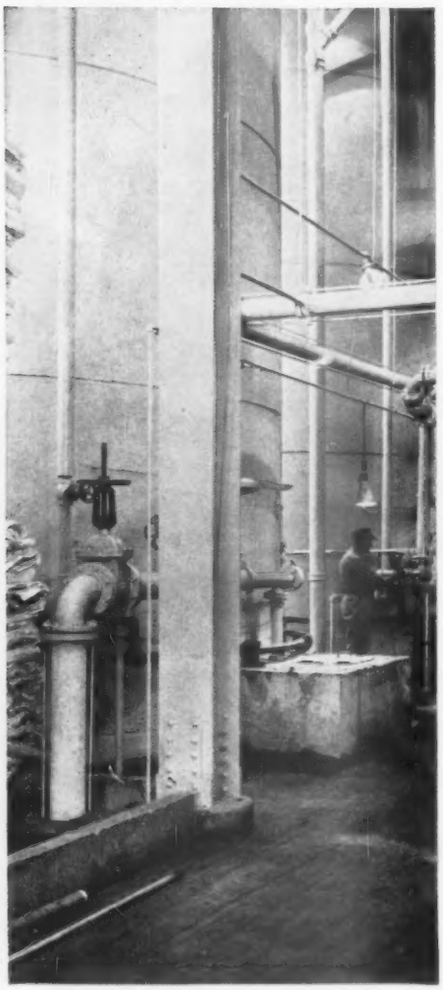
SIMONDS
SAW AND STEEL CO.
FITCHBURG, MASS.



THIS 210-INCH PAPER MACHINE, dramatically highlights Northwest's volume production . . . underscores the effectiveness of Du Pont peroxides.

At The Northwest Paper Company

Du Pont Peroxide Simplifies Bleaching . . . Increases Brightness



KRAFT BLEACH TOWERS, 30 feet high by 14 feet in diameter, part of the Northwest's complete automatic bleaching system, where Du Pont peroxides are used to help set the highest standards.

After successful laboratory work and mill trial runs, "Solozone" sodium peroxide was substituted for caustic soda in the caustic extraction stage. This peroxide application produced brighter pulp with better brightness stability and made possible the elimination of one of the final hypochlorite bleaching stages. The idled stage was then integrated into the sulfite bleach plant.

Paper mills everywhere are benefiting from Du Pont peroxide bleaching processes. They are used not only for kraft pulps, but also for groundwood, soda, sulfite, and for pulp made from waste paper. Technical service and assistance in specific applications are available upon request. For more facts about Du Pont peroxides and the Du Pont pulp bleaching processes, we invite you to call the Du Pont peroxide technical representative in your area.

MIDWEST AREA
Call M. K. Gruetzner
Chicago, INdependence 3-7250

NEW YORK & BOSTON AREA
Call C. R. Lombard
New York, LOngacre 3-6440

WEST COAST AREA
Call L. W. Blight
Portland, CApitol 7-1281

SOUTHERN AREA
Call A. M. Taber
Charlotte, FRanklin 5-5561

Electrochemicals Department
E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware

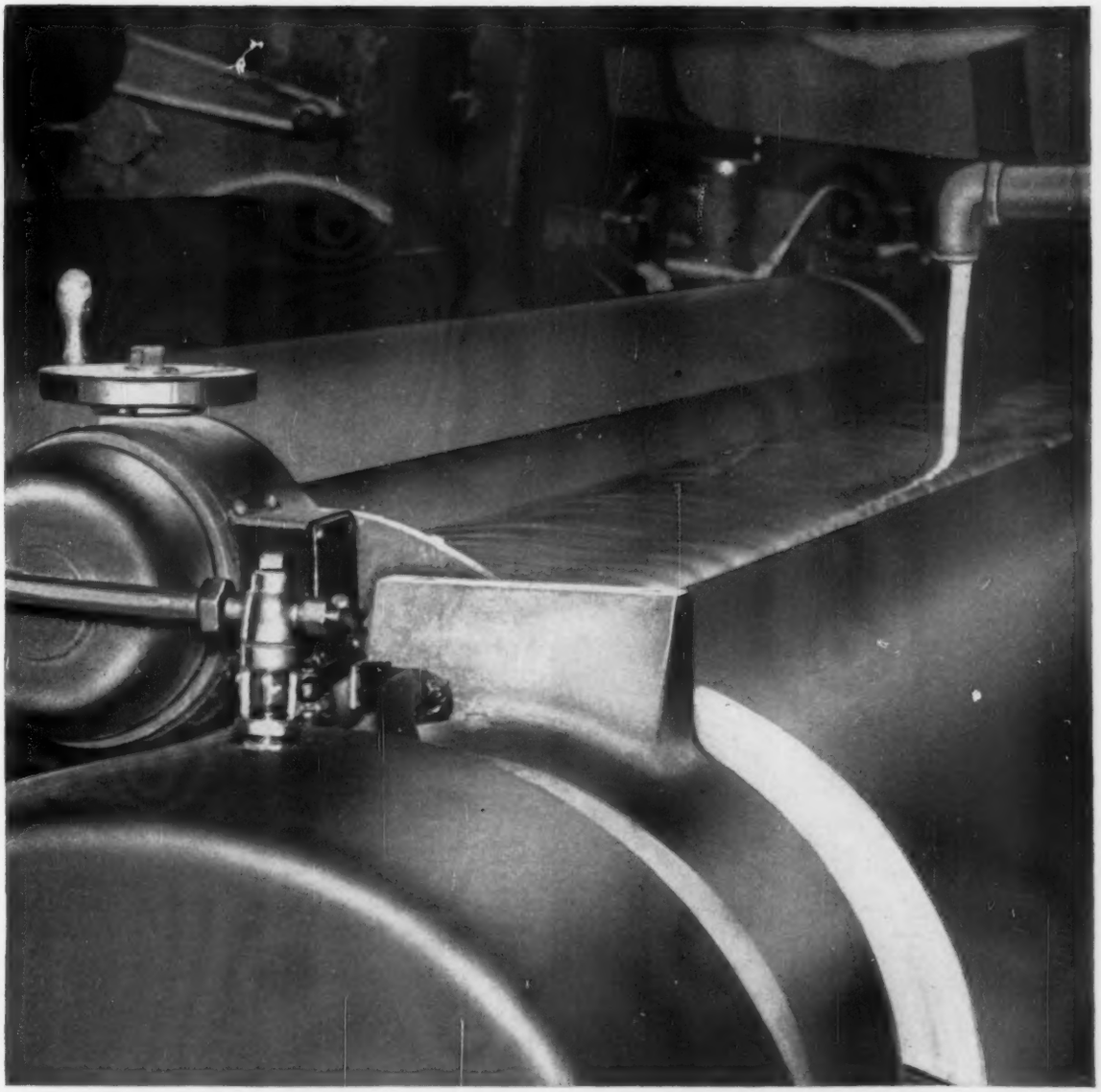
DU PONT PEROXIDES

ALBONE® hydrogen peroxide

SOLOZONE® sodium peroxide

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



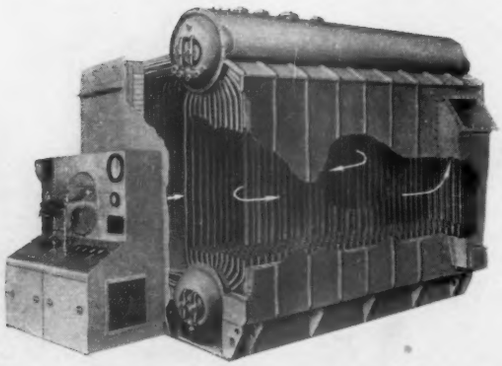
PRESKOTE® . . . *for fine coating . . . the critical test of a rubber covered roll*

While many of the rubber covered rolls in a paper machine may be termed "critical," none is more so than the coating rolls. For, fine coating demands a roll with a super-smooth surface . . . a surface which can be ground and reground maintaining a surface without imperfections which mar the sheet.

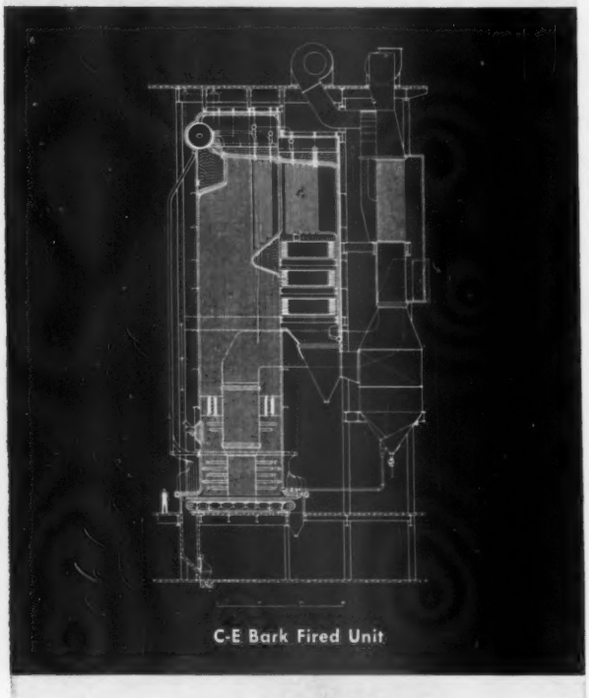
Even at Stowe-Woodward, Inc. where craftsmanship is a tradition, a coating roll receives extra care . . . and when it's finished, it's labelled "Preskote", the finest coating roll a mill can buy.

Complete roll processing plants at:
NEWTON UPPER FALLS, MASS.
NEENAH, WISCONSIN
GRIFFIN, GEORGIA

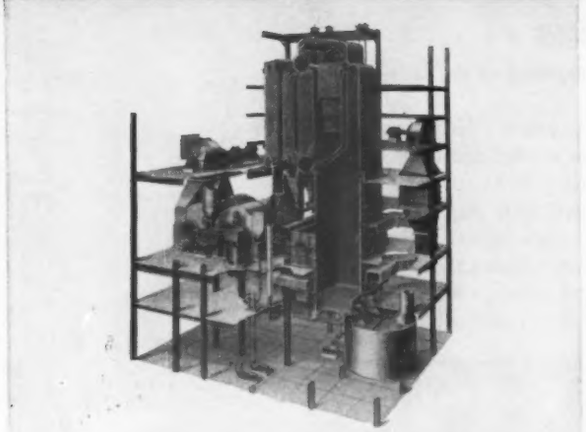
STOWE-WOODWARD, Inc.
Craftsmen in rubber
RUBBER ROLLS with a REPUTATION



C-E Package Boiler



C-E Bark Fired Unit



C-E Recovery Unit

Need Steam?

See C-E!

If you need steam and are concerned with how best to burn fuel to generate it efficiently, reliably and economically — See C-E.

Why? Because C-E has a complete line of steam generating and fuel burning equipment both standardized and custom-made to fit all the specialized requirements of the pulp and paper industry. No matter whether you burn Black Liquor, Waste Sulfite Liquor, Bark, Hogged Wood, Coal, Oil or Gas, C-E offers you equipment designed specifically for each job.

The acceptance accorded C-E equipment by the Pulp and Paper Industry is evidenced by the following facts.

1. Since 1945, leading pulp and paper mills have purchased C-E boilers for power and/or process requirements having an aggregate capacity of more than 15,000,000 lb of steam per hour.

2. Since 1945, sixteen leading mills have reordered C-E power boilers. In fact, one internationally known paper company placed nine separate orders.

3. Since 1945, more than 100 C-E Chemical Recovery Units have been purchased by pulp mills throughout the world. These include units ranging in capacity from less than 100 tons to the world's largest, having a capacity in excess of 650 tons.

4. Since 1945, nineteen leading pulp mills have reordered C-E Recovery Units; of this number four mills have reordered twice and two mills three times.

5. The C-E Bark Burning System has been installed in numerous pulp mills at home and abroad. Performance records show greatly increased efficiency and substantial savings over old fashioned bark burning methods.

These are but five indications of the widespread acceptance of C-E equipment in the pulp and paper industry. They are five good reasons why, before you buy, you should See C-E.

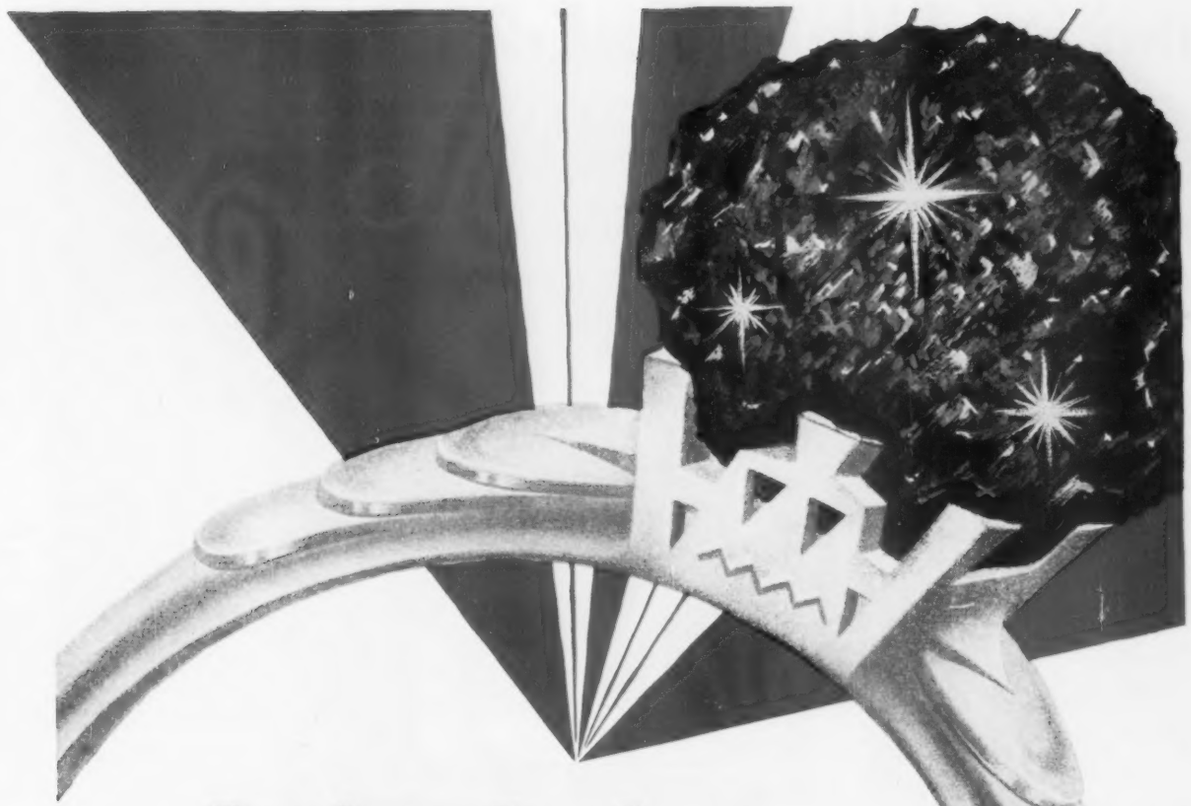
COMBUSTION ENGINEERING

C-E

Combustion Engineering Building
200 Madison Avenue
New York 16, N. Y.

B-929

steam generating units; nuclear reactors; paper mill equipment; pulverizers; flash drying systems; pressure vessels; home heating and cooling units; domestic water heaters; soil pipe



Precious Jewel of Industry's Future

"Black Diamonds" are America's most valuable resource for today and tomorrow! Only Bituminous coal can fully meet industry's needs for more electrical energy and more plant-power.

Convenient reserves of B&O Bituminous offer an unlimited supply of coals for every purpose, at low-cost. *Ask our man!*

LET OUR COAL TRAFFIC REPRESENTATIVES suggest a B&O Bituminous for your needs.

COAL TRAFFIC DEPARTMENT B&O RAILROAD
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BALTIMORE & OHIO RAILROAD

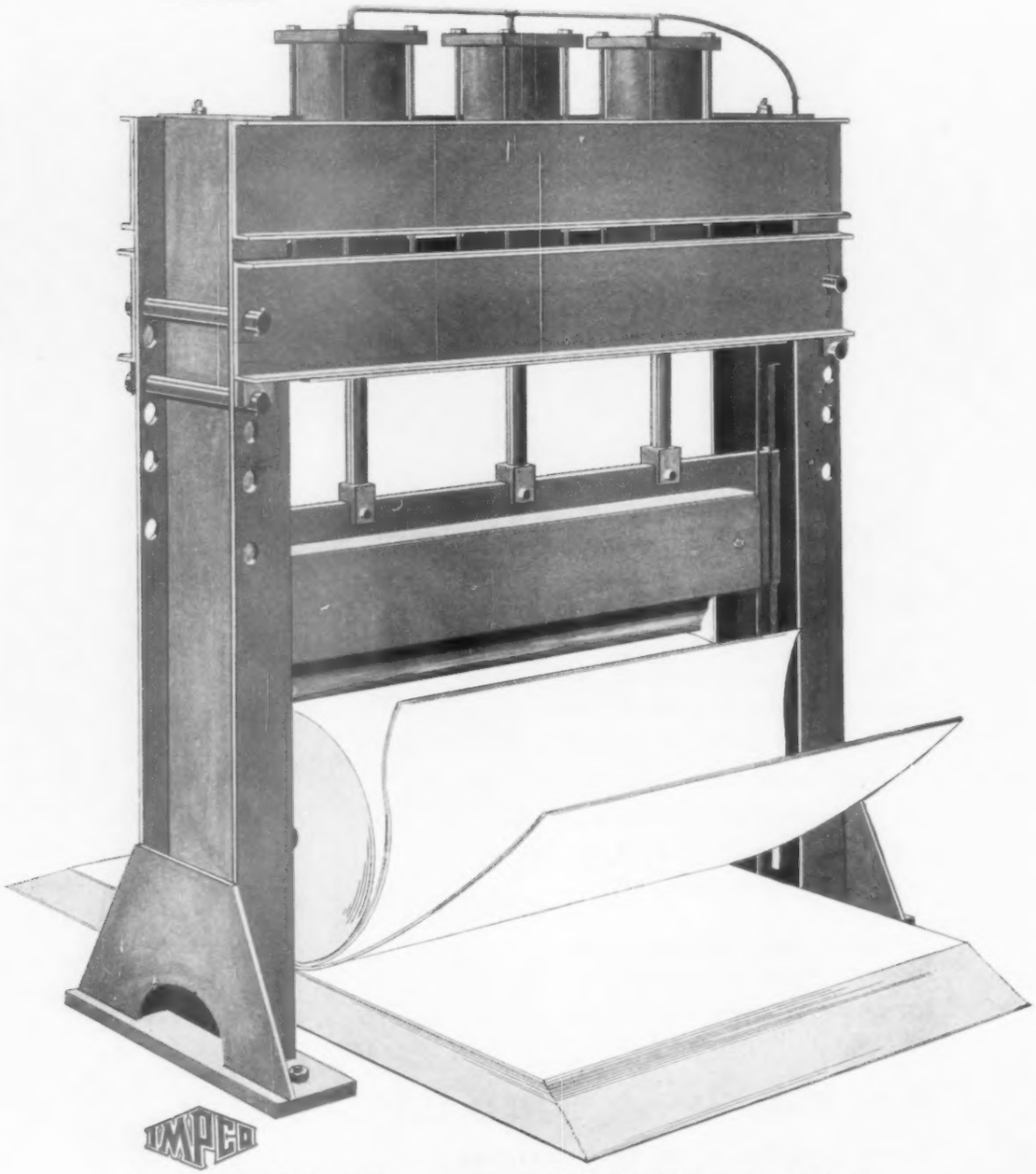
Bituminous Coals For Every Purpose

LINKING 13 GREAT STATES WITH THE NATION B&O

IMPCO GUILLOTINE ROLL CUTTER

IMPCO now offers this recently developed, mill-proven machine used for the rapid slabbing of off-standard rolls. We build this unit in three sizes to handle 60″, 72″ and 90″ maximum roll lengths, each capable of cutting rolls up to 60″ in diameter.

The overall height requirement of the largest model is but 12′ and occupies a floor space area of only 3′ x 10′. Send today for Bulletin J5-1 for complete information.



IMPCO

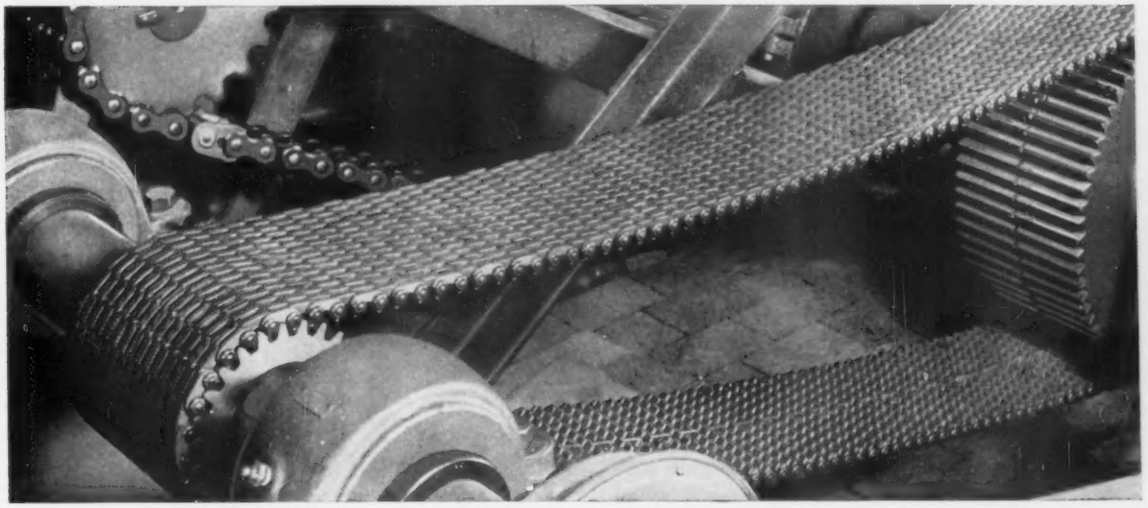
IMPROVED MACHINERY INC.

NASHUA, NEW HAMPSHIRE

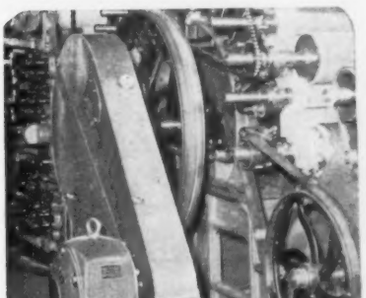
In Canada, Sherbrooke Machineries Limited
Sherbrooke, Quebec

Check your drives against the benefits of

LINK-BELT silent chain

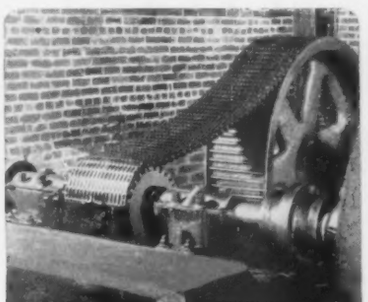


☐ **HIGH SPEED.** Link-Belt silent chain drives are noted for slipless dependability—maintain better than 98% efficiency whether operating over large or small diameter wheels or on long or short centers. For further details on these and more advantages, call your Link-Belt office or authorized distributor.

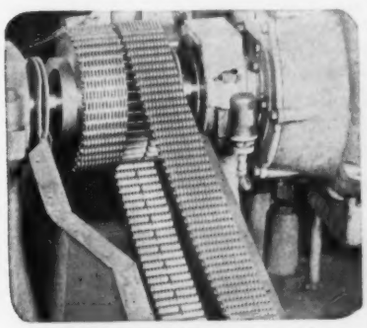


☐ **ADVERSE OPERATING CONDITIONS.** Heat, humidity, cold do not lower Link-Belt silent chain's great efficiency.

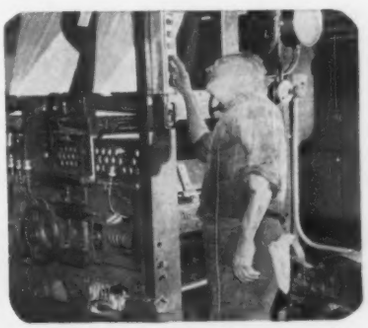
☐ **LARGE OR SMALL HP.** A versatile line, these Link-Belt drives are available from fractional to thousands of hp.



☐ **LARGE RATIOS.** Link-Belt silent chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



☐ **LIMITED SPACE.** Easy to assemble in close quarters, Link-Belt silent chain permits built-in drives, compact housings.



☐ **LONG LIFE.** After 13 years on this newspaper press at speeds up to 4,700 fpm, Link-Belt silent chain is still efficient.

Ask for 88-page Book 2425 — complete data on Link-Belt silent chain drives.

LINK-BELT

14,035

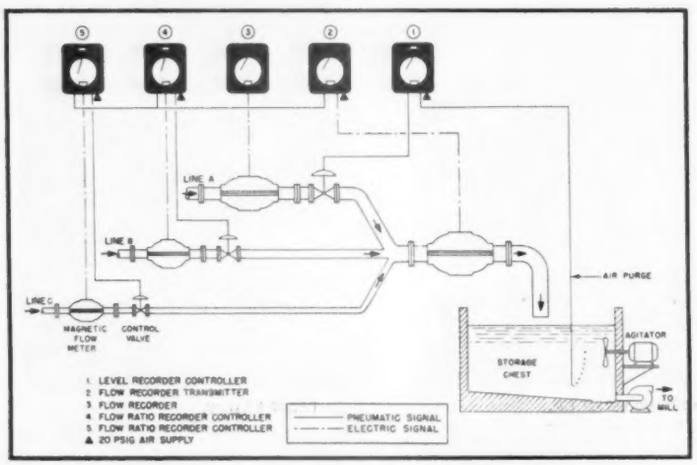
SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

NOW! Continuous Pulp Stock Blending

. . . with the Foxboro MAGNETIC FLOW METER

- No line restriction.
- No pressure drop.
- Measures fluid velocity directly.
- No meter runs, straightening vanes, or purges.



Stocks ratioed to each other or to total flow

Above is a typical application of the Foxboro pulp stock blending system, in which each stock flow is ratioed to total flow. However, lines B and C can be ratioed to the major furnish, line A, if desired. In either case, pulp stock flows in line B and C are controlled with ratio controllers 4 and 5. Ratios are set on the controller dials. Line A then automatically supplies balance of the pulp stock required to maintain constant level in storage chest. Any ratio easily altered by changing dial setting on proper ratio controller.

Here at last is a problem-free method for continuous pulp stock blending. Based on the Foxboro Magnetic Flow Meter, this system has no line restrictions or pressure taps — nothing to foul or plug up — nothing to interfere with sustained accuracy of flow measurement.

Centralized control of any number of pulp stocks. One man easily controls the entire blending operation by the simple adjustment of ratio dials. And he can easily vary the blend *at any time* merely by changing the settings.

Precise blending — Final blend of the exact proportions desired is assured with this advanced automatic system. Batch stock tanks are eliminated; greater output is achieved.

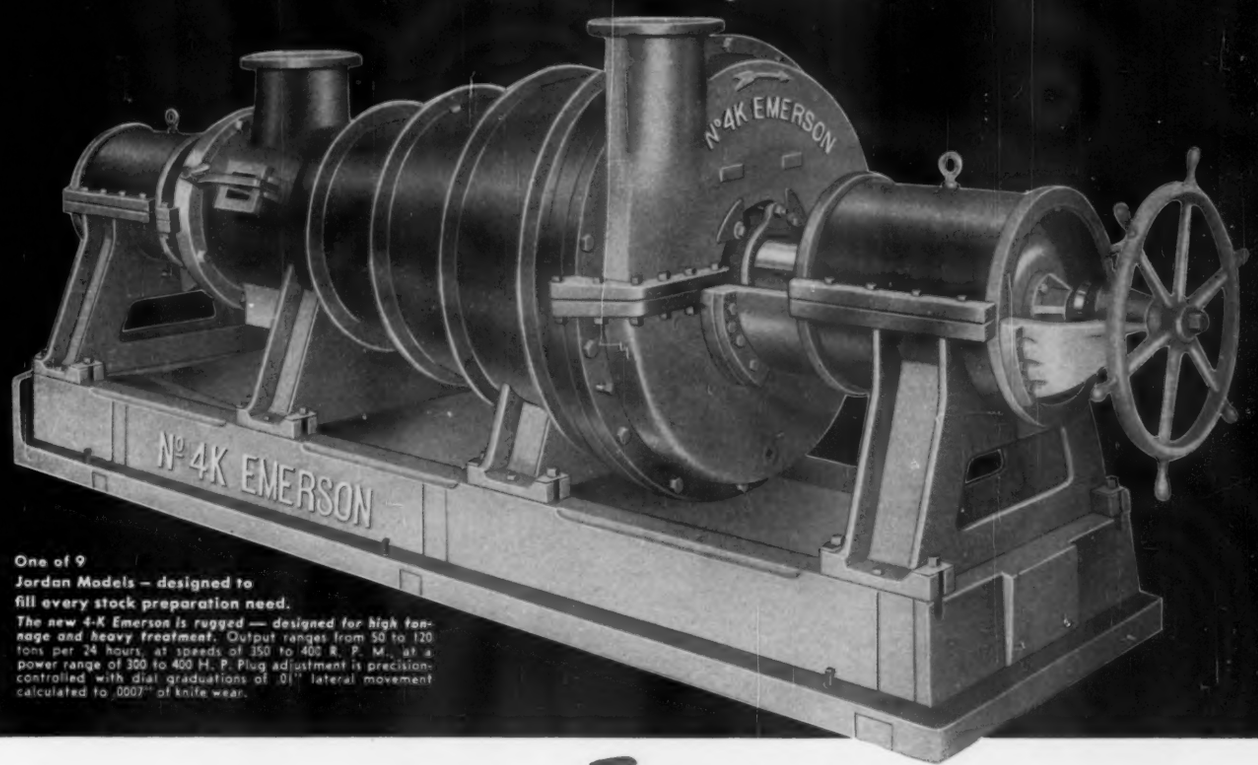
Details on this newest application of the Foxboro Magnetic Flow Meter will be gladly furnished by your nearby Foxboro Field Engineer. Or write **The Foxboro Company, 992 Neponset Avenue, Foxboro, Mass., U.S.A.**

FOXBORO
REG. U.S. PAT. OFF.

Foremost in FLOW METERING

FACTORIES IN THE UNITED STATES, CANADA AND ENGLAND

Split heads cut maintenance 15%



One of 9
Jordan Models – designed to fill every stock preparation need.

The new 4-K Emerson is rugged — designed for high tonnage and heavy treatment. Output ranges from 50 to 120 tons per 24 hours, at speeds of 350 to 400 R. P. M., at a power range of 300 to 400 H. P. Plug adjustment is precision-controlled with dial graduations of .01" lateral movement calculated to .0007" of knife wear.

IN NEW 4-K *Emerson* JORDAN

THE split heads designed in the new 4-K Emerson Jordan make possible replacement of fillings *without removing bearings from the shaft, with savings in labor and production of 15% or more.*

Both large and small heads are made in two sections, flanged, bolted together and accurately machined to fit the shell. Simply unbolt the head sections and the bearing pedestal covers, then quickly withdraw the plug and shaft *without removing bearings from the shaft.* After installation of new, stand-by fillings and retightening of bolts, production can be resumed.

Engineered to give many years of dependable, rugged service, Emerson "builds in" all the qualities needed for top-efficiency refining. These, added to Emerson's years of manufacturing experience, give papermakers long, trouble-free runs of uniformly high production at *low maintenance costs.*

For these advantages, specify the new 4-K Emerson. Full details are available, at no obligation to you, from The Emerson Manufacturing Company, Division of JOHN W. BOLTON & SONS, INC., LAWRENCE, MASSACHUSETTS.

Facts from the Papermaker:

Emerson Jordans are made to meet the increased demands in refining introduced by higher speeds, temperatures and pressures. With more and stronger chemicals in use, the battle to resist corrosion takes on new importance. For example, Emerson Engineering and Research calls for stainless steel Jordan Plugs and Bolton Microlyzed* Fillings for refining efficiency that will pay handsomely in years to come.

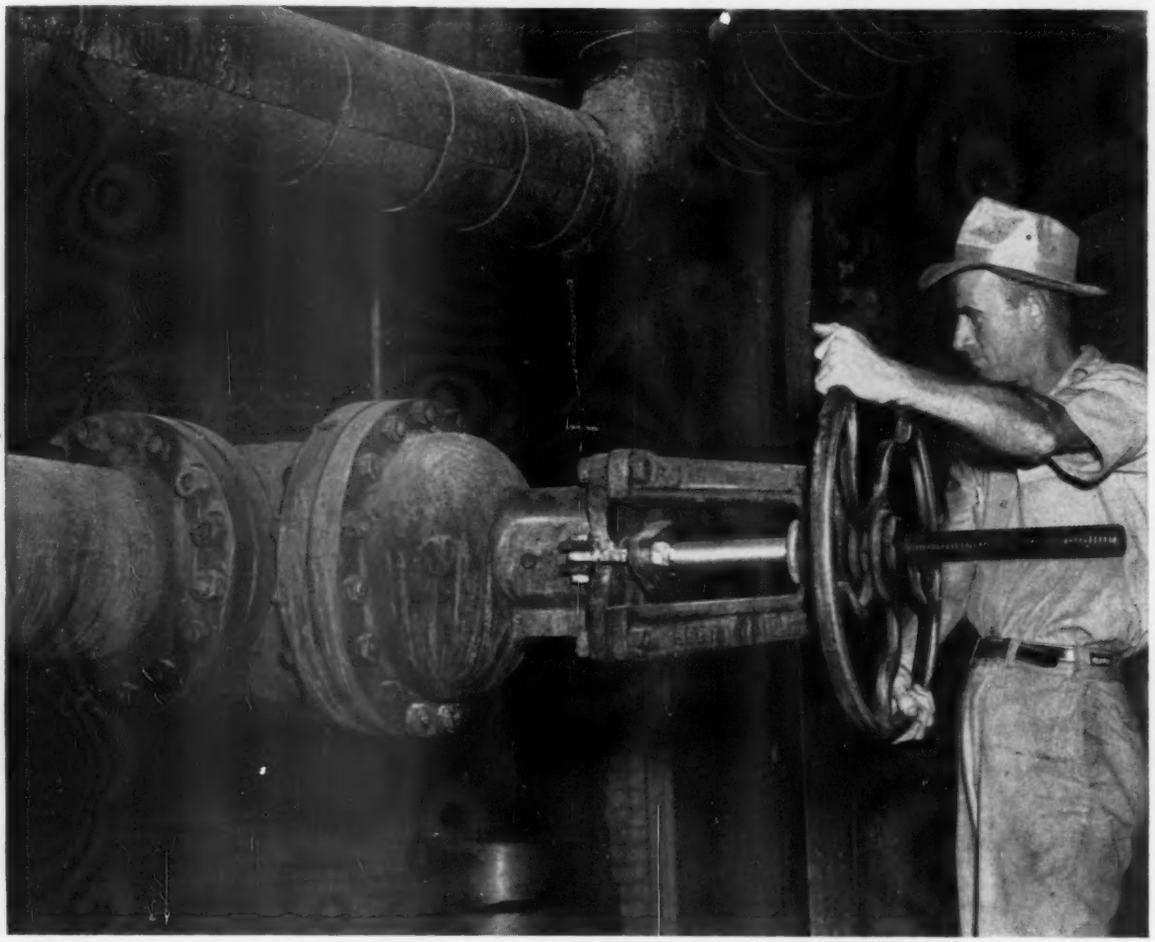
*REG. T.M. APP. FOR.

BOLTON EMERSON
TRADE MARK

Filling the Needs of Papermakers: JORDANS • CLAFLINS • FILLINGS • PLUGS • STAINLESS PLUG JACKETS • BEATER BARS AND BED PLATES • SHOWER PIPES • SUCTION BOX COVERS • MAGNETIC EQUIPMENT • MACHINE KNIVES.

IN CANADA: Pulp and Paper Mill Accessories, Ltd. Montreal, P. Q.
OVERSEAS: United States Machinery Co., Inc. 90 Broad Street, New York 4, N. Y.
IN MEXICO: Manuel Del Castillo 1. La Catolica 45 Desp. 711-712 Mexico (1) D.F.

These Crane Valves Excel on Secondary Digester Blowdown



Crane 10-inch, 300-lb. No. 33XL cast steel gate valve with 18-8 liners installed on digester in major paper mill, handling corrosive liquors at 100 psi., 400°F.

"Too tough for hot, corrosive liquors"

. . . That's the report this major paper mill gives on Crane No. 33XL cast steel gate valves.

Up to 6 years ago, the mill was forced to replace secondary digester blowdown valves on every shutdown. Corrosion worked the body seat rings loose, made valve closure impossible.

Why did these Crane 33XL valves eliminate this costly maintenance problem? Because the body seat rings, liners and flange faces of these valves are 18-8 SMo alloy, integrally welded—making them tough enough to withstand the hot, corrosive liquors.

When you buy valves on price alone—or because they "look good enough"—you're gambling with your production. Be sure: choose your valves and fittings from the big, complete, strictly quality Crane line—first choice of industry for a century.

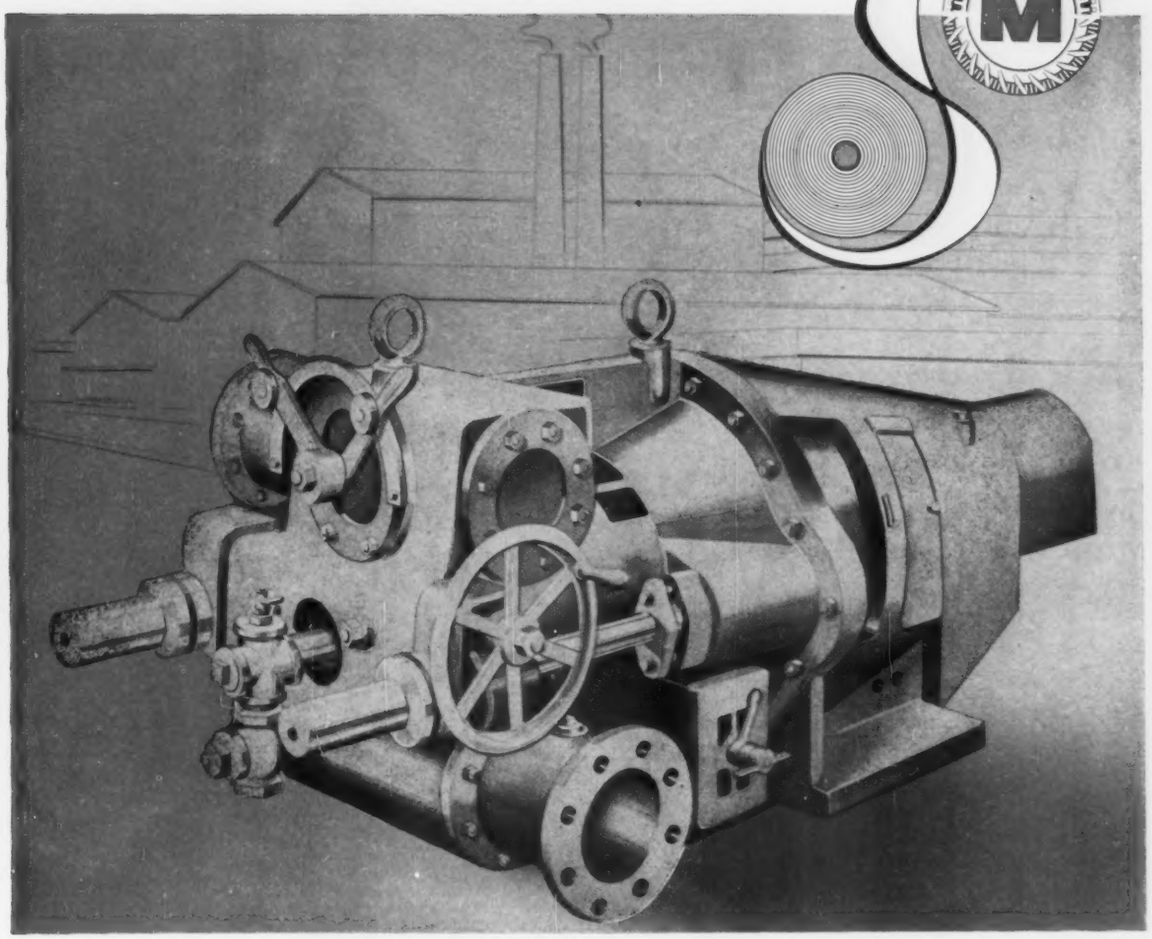
You may spot cost-saving ideas in this book of "Valve Performance Facts"—32 case histories throughout industry. Ask your Crane Representative, or write for a copy.

CRANE VALVES & FITTINGS

PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

MORDEN



Specialists in Quality and Service

In hundreds of mills, in more than 20 countries, Morden machinery is depended upon for quality stock preparation.

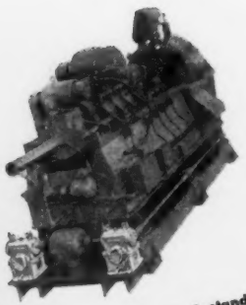
There is a definite reason for this widespread confidence. Morden has specialized in stock preparation equipment ever since its founding in 1931. Morden's sole concern is the manufacture and improvement of equipment to simplify stock preparation. Morden maintains its own laboratory where Morden equipment is tested and adapted to solve specific mill problems. In addition, Morden's personnel is traveling continually to assist in the use of Morden equipment.

If your mill is interested in quality production with worth-while savings in power and labor, it will pay you to investigate the many advantages of Mordenizing your stock preparation. For further details refer to your Morden Catalog, or if you do not have one, send for your copy and ask us to visit you for an in-the-mill discussion of your requirements.

MORDEN MACHINES COMPANY

3420 S. W. MACADAM AVENUE • PORTLAND, OREGON

UNITED STATES REPRESENTATIVES — Midwest: Dan B. Chapman, Appleton, Wis.; Northeast: Orion Corporation, Fitchburg, Mass.; South: Brandon Sales, Greenville, S. C.



Cleveland worm gearing is standard on these fully-automatic machines which thread oil field pipe to rigid A.P.I. specifications, ranging from 1¼" to 13⅝" O.D. In addition to worm gearing inside the machine, note two Cleveland Worm Gear Speed Reducers in foreground.

On job 18 years, CLEVELAND drive is good as new

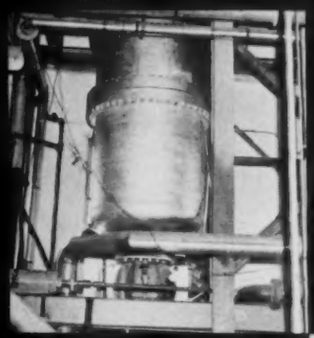
AFTER 18 years of continuous service in a well-known pipe mill in Pennsylvania, a Stamets pipe threading machine had its first major overhaul. When the Cleveland worm gearing was removed from the machine it looked almost like new, showed only slight traces of wear. This unretouched photograph reveals the splendid condition of both the worm and gear. In fact, the gearing is in such fine shape that it was put right back in the machine—probably good for another 18 years of strenuous pipe threading.

This example is one of thousands of Cleveland worm gear drives, many made 25 and even 30 years ago that are still in service today. They serve in every phase of American industry, drive every type of mechanical equipment where a powerful, trouble-free, right-angle drive is wanted.

For full presentation of the many types and sizes of Cleveland worm-gear drives available, write for Catalog 400. The Cleveland Worm & Gear Co., 3268 E. 80th St., Cleveland 4, Ohio.

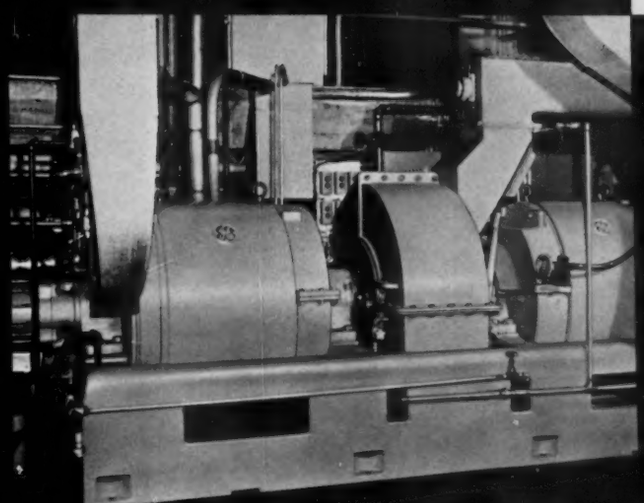
Affiliate: The Farval Corporation, Centralized Systems of Lubrication.
In Canada: Peacock Brothers Limited.

CLEVELAND
Worm Gear
Speed Reducers



Lower part of Bauer Rapid Cycle Digester at Gould Paper Co.

Bauer Develops New Pulping Process



Bauer Double-Disc Refiner at Gould Paper Co. One of the essential machines in the Bauerite process.

Pioneered at *Gould Paper Co.*

Prior to September, 1956, softwoods had been the principal source of pulp material for Gould Paper Co., Lyons Falls, N. Y. Because the stands of softwoods in the area were about depleted, the near future posed serious problems.

The outlook at Gould Paper was brightened by the new Bauerite* process developed in our fibre products laboratory.

Continued on next page

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The Bauer Bros. Co.
Springfield, Ohio

It demonstrated that a groundwood type of pulp could be made from hardwood chips.

President Ralph W. Luethi of Gould Paper Co. and we were convinced that this process would successfully and economically produce the desired type of pulp from hardwoods. So the company engaged us to supply the Bauer equipment essential to the process. The results in respect to paper quality have exceeeded expectations.

The *Bauerite* Process

The train of equipment for the new process begins with the Bauer Rapid Cycle Digester where the hardwood chips are pressure impregnated with cold caustic solution. Thence the chips go to a Pressafiner which expels the spent caustic and moisture from the chips.

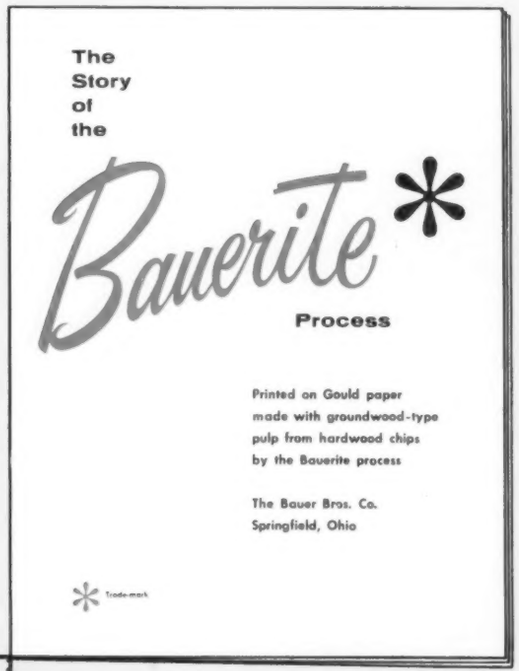
The pressed fiber is conveyed to an 800 hp Bauer Double-Disc Refiner for fiberizing; then to another similar refiner for a final brushing. After screening, the stock is pumped to a bank of Bauer Centri•Cleaners for dirt removal.

When bleached, the pulp is pumped through a Bauer Single-Disc Pressure Refiner for strength development.

A similar system using the Bauerite process is in operation making molding pulp. Another system like Gould's has started up in the South to make pulp by the Bauerite process for newsprint. Others are being designed for fine paper pulp production and corrugating medium.

*Trade-mark

Battery of seventeen primary and two secondary Centri• Cleaners at Gould Paper Co.



Printed on Gould paper is a booklet which gives additional information on producing groundwood-type pulp from chips by the Bauerite process. Other photographs of the installation are shown. Very interesting. Mail the card.

Gentlemen:

As offered in _____ **, send me a copy of your booklet, "The Story of the Bauerite Process."**

Name of Magazine

_____

Name of Individual **Title**

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Company

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Local Address

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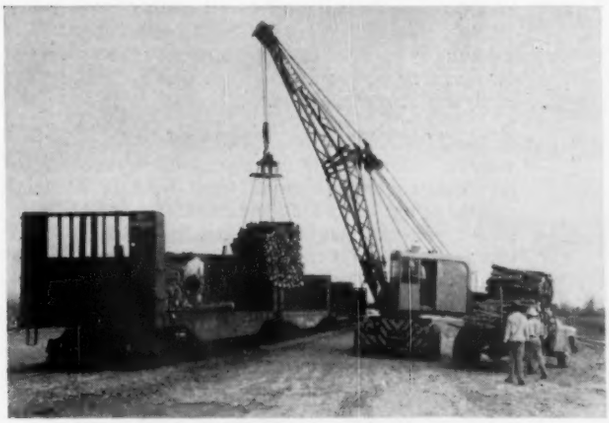
5 "SHORT CUTS"

for Handling Pulpwood

...every one a LORAIN

5 mills... 5 Lorains... 5 ways to cut time and boost wood handling volume. You see, Lorain has worked closely with pulpwood handlers, large and small. The result: the most complete and versatile assortment of pulpwood handlers up to 75-ton capacity. Crawler or rubber-tire mountings are available... plus every conceivable pulpwood handling device... sling or grapple, grab or rake. Your Thew-Lorain Distributor is a specialist in your field. Call him for your next need!

7-TON TRUCK CRANE, *equipped with pulpwood grapple, loads trucks in the woods. This Lorain can be mounted on factory-built carrier or commercial truck chassis. High-speed mobility enables it to serve at yard or in woods.*



SELF-PROPELLED LORAIN, *22½-ton SP-424 Crane, uses a sling to handle big pay loads each lift. Mobile, Self-Propelled Lorains travel quickly anywhere to serve a wide area of even the largest yard.*

GANTRY-MOUNTED RAKE *unloads pulpwood from rack cars to mill flume in 5 to 6 minutes per car. This special Lorain unloader reaches to the far side of the rack car — then quickly "rakes" logs off the car. Lorain Rakes are available also on crawler and rubber tires.*

BIG 61-TON LORAIN *with pulpwood grapple handles jackstrawed wood to give this mill top capacity. Crawler mounting is ideal for steady work at the stockpile.*

20-TON LORAIN CRAWLER CRANE *with special pulpwood grapple, unloads rack cars in a hurry — then swings 180° to pile high in space-saving high stacks.*

THE THEW SHOVEL CO., LORAIN, OHIO

THEW LORAIN®

With the flick of the wrists

. . LOADS 3 CORDS OF PULPWOOD IN 6 MINUTES!

HOPTO

Completely Hydraulic

LOG GRAPPLE

CHECK THESE EXCLUSIVE HOPTO FEATURES

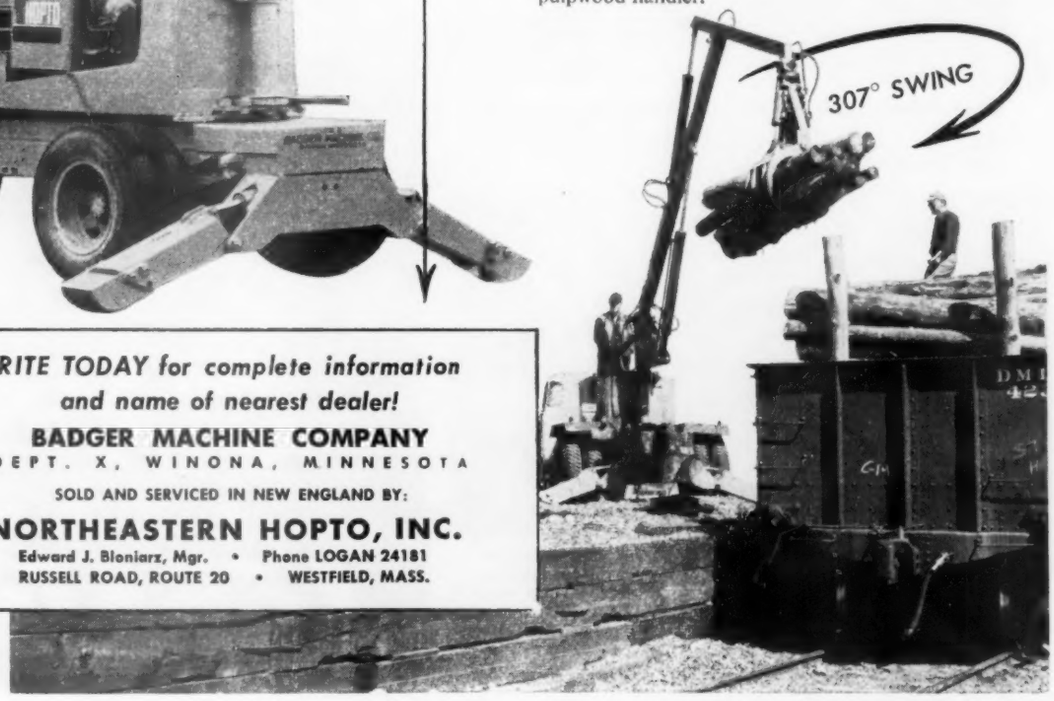
- Variable speed swing control turns boom through 307°.
- Double relief valve in swing circuit cushions boom swing for faster, safer operation.
- Full 18-foot clearance with a quarter cord of 8-foot pulpwood.
- Heavy-duty hydraulic system with double wire braided hoses and heavy-duty pipe fittings on all high pressure lines.
- Built-in relief valve in 1500 PSI system.
- All controls conveniently located for operator. Boom is never over or above operator.
- Highly mobile. Mounts on any one-and-a-half ton or larger truck!
- Long reach! Maximum surface reach on ground line is 17 feet, 15 feet at 12-foot height. All measurements from boom mounting.
- Positive power on Grapple and positive down pressure assures full grapple every time.
- Grapple available for both 8 foot and 4 foot length pulpwood.

HOPTO BREAKS THE HANDLING BOTTLENECK

Conveniently located face-forward levers actuate every movement of this work-hungry grapple! HOPTO mounts on any one-and-a-half ton or larger truck . . . gives you a highly mobile, *low-cost* unit. Operator levels HOPTO on individually operated hydraulic outriggers from his regular operating position. Set-ups are quickly and conveniently made for safe operation.

30 SECOND LOADING CYCLE!

HOPTO reaches out 15 feet beyond boom mounting to take quarter-cord bite from largest truck or gondola, quickly swings up to 307°, and returns for another load, *all in 30 seconds!* HOPTO loads as many as seven railroad cars in a single day! It's the fast-cycling, completely hydraulic unit. Exclusive HOPTO safety engineered features and ease of handling recommend it as the low-cost pulpwood handler.



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ALLIS-CHALMERS ADVANCED-DESIGN CRAWLER TRACTORS

turn waste time into work time

You get extra money-making work time with an Allis-Chalmers crawler tractor on every logging job. Built for big-scale production, these crawlers are wheeling out more work in less time than comparable-size machines.

Look at the facts

1,000-hour lubrication intervals save lube time

Allis-Chalmers tractors start the day with go—not greasing. You can operate six months on a 40-hour week basis with just one lubrication of truck wheels, front idlers and support rollers. Designed with Positive Seals and tapered roller bearings, these units are protected from dust, loose sand, soft ground, mud or water. You not only gain working time, but save labor and lubricant costs as well. And there's no costly damage from greasing neglect.

Modern shift pattern speeds maneuverability

Here's a big timesaver in the woods. It takes just half the time and effort to change from low forward to fast reverse with the Allis-Chalmers HD-6 or HD-11 transmission. One simple shift of the gear lever does the job. You gain production time—up to 25 percent on actual test—on jobs calling for a short forward-backward cycle.

Unit construction cuts servicing time

No need to remove transmission or engine, radiator, grille, when servicing or removing an Allis-Chalmers master clutch. This unit can be removed without disturbing adjacent parts. This is also true of other main assemblies—final drive gear, transmission, steering clutches, engine and truck frame. You can quickly substitute an assembly and put the tractor to work while servicing the original unit. As a result, hours of costly service and downtime are saved because of Allis-Chalmers advanced design.

These are just three examples of Allis-Chalmers timesaving, money-making features. Your Allis-Chalmers dealer can point out many more. See him now for the full story.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

There's something new
in the tall timber

IT'S THE OLIVER OC-12
WITH POWER-TURN STEERING

POWER-TURN

Yes, with Oliver's amazing POWER-TURN you'll work faster and save money. You'll do it because you'll have *full power* on both tracks at all times. Think of it: full-time working power—with no loss of tractive force even on the sharpest turns. This extra productive capacity is yours with whatever attachments you may use—bull-dozers, angle dozers, winches or loaders. Not only do you have better control for every maneuver—but you also have *easier* control with finger-tip steering that means less fatigue and bigger production on every job. Only Oliver has POWER-TURN!

It's one of the most powerful crawler tractors of its class—ready to help you put extra speed and push into all kinds of tasks in the woods or around the mill. Available with a full choice of attachments. Oliver's extra high clearance lets you ride over rocks and stumps that force other crawlers to detour. Through soft, boggy ground or up steep hills you have the sure-footed traction that means more work per day.

Here's 53 drawbar h.p. for the tough road-building jobs. Among the new features on the OC-12 is the new over-center hand clutch with 33% larger area which doubles clutch life. It's impossible to ride this clutch. Also new is the easy-operating foot brake which requires only light pressure to hold the tractor on any grade. It frees operator's hands, increases over-all efficiency. Ask your Oliver distributor to demonstrate the new OC-12 today.

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A COMPLETE LINE OF INDUSTRIAL WHEEL AND CRAWLER TRACTORS AND MATCHED ALLIED EQUIPMENT

Government vs. Industry Approach

Will be aired at Paper Week sessions. Major industry problems will be discussed by experts and panels

• Five key problems will command the attention of the pulpwood industry during Paper Week in the Waldorf Astoria hotel, New York City, Feb. 19 and 20. Convening for its 23rd annual meeting, the American Pulpwood Assn. will discuss:

1—The Soil Bank Act. This controversial legislation has many features not clearly understood. A contrast in approach to solving problems of small forest and woodlot owners in the U.S. will be discussed—the subsidized government approach vs. the industry sponsored programs.

W. S. Swingler, assistant chief forester and project leader, USFS, Soil Bank Act, will show how the act is explained to farmers. Representatives of the AFPI and SPCA will explain their approach to tree farm and tree farm family programs to farmers. Howard Palmquist of Marathon Corp. will discuss incentive payments by industry for improved forestry. This session will be held at the APA Forest Policy Forum, a session previously sponsored by the American Paper & Pulp Assn.

2—Industrial Defense. This, the first of four open meetings, has been programmed by Executive Secretary Bill Bromley after attending a government-sponsored session on defense preparedness. He was so impressed he is asking the pulpwood industry to take a look at itself, see whether it really is ready in case of national emergency.

The three-pronged session will feature talks on manpower readiness for mobilization; equipment allocation plans and company plans for forest protection and pulpwood production in emergencies.

3—Stepping up production per manday. Carl Miller of Buckey Cellulose Corp. will discuss advantages and limitations of mechanization. Others will talk on personnel improvement and company versus producer operations. Experience of five pulpwood regions will be discussed by a panel.

4—Forest site classification, preparation, improvement. A soil capability survey of the Soil Conservation Service by Assistant Administrator Charles E. Kellogg is included, also financial analyses of forest site preparation by a forest economist and forest site improvement by specialists. The U.S. forest industry is spending great sums of money on improving sites, a problem of national concern and importance.

5—Increasing utilization of woods and mill leftovers. Papers will be given on economics of wood chip utilization and on scope of current mechanization in preparing, moving and storing wood chips. A panel will discuss the current and future significance of wood leftovers.

Now a Forest Consultant

William B. Stover, who for 22 years was associated with Forest Survey work with Southern Forest Experiment Station, and for 8 years in charge of the work, is now in private consulting, specializing in forest resource and related work. Mr. Stover became associated with the survey under "Cap." I. F. Eldredge, regional director of that project and was active in the original survey in 10 of the 12 Southern states. A forestry graduate of Michigan State (1925) he worked for USFS and private companies in California, Wyoming, Colorado, South Dakota, and Michigan. He maintains headquarters at 6178 Louisville St., New Orleans 24, La.

Axel Brandstrom Honored by U. of Washington

Selection of Axel J. F. Brandstrom as the first Col. W. B. Greeley lecturer in industrial forestry is announced by the University of Washington college of Forestry. Mr. Brandstrom was selected for this honor because of pioneer work in industrial forestry. He will give four lectures at the college Feb. 27, 28, Mar. 1 and 2, open to the public, the first three in Anderson Hall at 3:30 and the fourth at the Forest Club-Alumni Banquet on Sat. night."

Mr. Brandstrom was born in Sweden, came to the United States and entered the U. of Wash. college of forestry in 1915 and graduated in 1919. In 1930 he was appointed senior forest economist by the U.S. Forest Service. From 1940 to 1946 he served as chief forester for Crown Zellerbach Corp. at Portland, Ore. In 1946 he became a private consulting forester. Recently he served pulp industries in British Columbia.

The late Colonel W. B. Greeley was one of the pioneers in industrial forestry.

How Much Residue Wood is Used for Chips

Chips obtained from residue wood account for one-third of the 5 million cords of pulpwood per year currently used in Oregon and Washington, according to E. E. Matson, chief, forest utilization unit, U.S. Forest & Range Experiment Station, speaking at the fall meeting of American Society of Mechanical Engineers in Portland.

He pointed out that the consumption was 660,000 cords (equivalent) in 1950, double that by 1952 and 1.7 million cords in 1955. Usage of by-product chips, he predicts, will expand at an even faster rate with the completion of pulp mills already projected, only one of which is expected to use the sulfite process.

Delivers 32 Cords an Hour

At Gulf States Paper Corp., engineers designed this simple, effective way of unloading sawmill chips. Screw conveyors in floor of concrete dock carry chips from right, where trucks unload, or from under hopper cars at left. Ramp services dump trucks. Screw conveyors deliver chips to inclined conveyor at rear, which carries them to roof of pulp mill.

How Gulf States Handles Its Chips

Simple, effective conveyor system enables Tuscaloosa mill to unload its daily chip bonanza of 150 cords swiftly

• Most of the South's big paper mills are literally in the chips—sawmill chips, that is. The trend toward use of wastewood chips from sawmill slabs is on the increase and all indications point to 1957 as the biggest year yet.

Typical of the Southern mills, which are learning to depend more and more on a product which once went up in smoke at the sawmill, is Gulf States Paper Corp. at Tuscaloosa, Ala. Today, the 400-ton-a-day mill which produces one of every seven grocery bags made in the U. S., buys some nine carloads (16 units per car) of chips each day. About 150 cords of the daily 800 cords required by the mill is supplied in chip form from nearby sawmills. The system is working out most satisfactorily, according to Vance Miles, forestry manager, and E. E. Loper, procurement director.

With its procurement department on a definite chip purchasing schedule, however, it was soon discovered that provisions had to be made for delivering the chips from the unloading site to chip silos. The problem was somewhat pesky. The rail spur, which would bring in about half the chips, terminated in a somewhat restricted area and a building separated the rail site from the chip silos several hundred feet away. Gulf States needed an unloading dock which wouldn't take up too much space and a conveying system to the storage area.

Gulf States Paper Corp. was one of first mills in the South to recognize the vast potential of chips from sawmill waste. It now plans an eventual goal of 25% of necessary pulpwood in chip form. Here's how they are handling this "chip bonanza."

H. K. Fersugon Co., working closely with Gulf States' engineers and Link-Belt Co., came up with a system for moving chips from both truck and railroad car which is efficient and swift. Cost of the installation was described as "reasonable."

How System Is Designed . . .

The system consists of four con-

veyors, two of which are screw drives and the other two of the rubber belt type. A concrete loading dock some 15 ft. long and 10 ft. wide was built adjacent to the rail spur. One of the Link-Belt screw drives is located in the floor of the concrete structure and the other runs under the rail spur. The two screw conveyors, driven by a two-speed, 25 hp Westinghouse motor, deliver chips toward the middle of the pit where they drop onto an inclined rubber belt conveyor powered by a 10 hp motor which carries them 200 ft. to the roof of the pulp mill. Here chips are dropped to the second rubber conveyor, a cross-conveyor operated by a 3 hp motor, which carries chips to the silos for storage. The inclined conveyor separates the two screw drives, thereby servicing both of them.

The concrete dock is open at both ends and equipped with a concrete ramp up one side. Freight and hopper cars are delivered to one end of the dock by a Stevens-Adamson car-puller. Hopper cars can be unloaded through the bottom directly to the screw conveyor and a car shaker with a 10 hp motor manages to sift all chips out. Box cars are unloaded by an Allis-Chalmers Tractoloader which drops the chips straight through the iron-grating which acts as a "roof" for the dock. At the other end, trailer trucks are backed up to the dock and unloaded by Tractoloader. Dump trucks back up the ramp and drop chips directly on the screw conveyor.

Will Handle 25% of Required Chips . . .

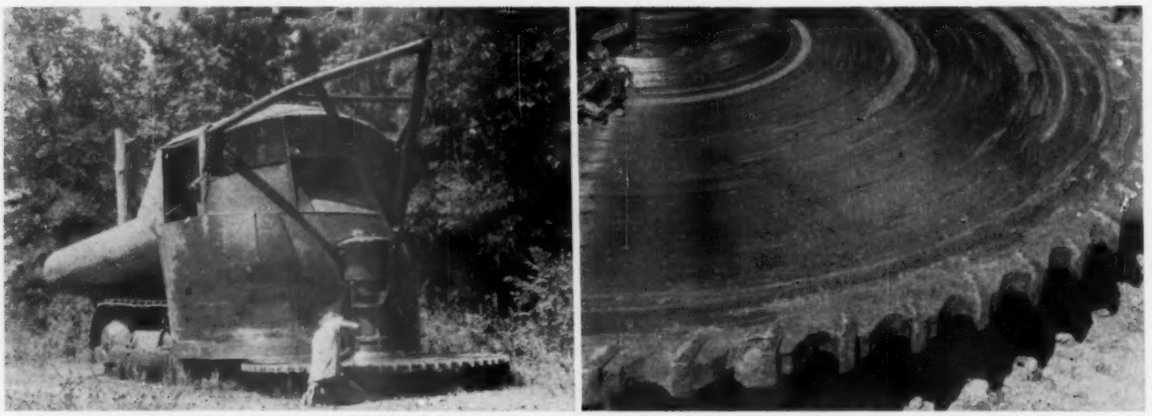
Gulf States can thus deliver all purchased chips swiftly and in a minimum of space. The system has a rated capacity of 32 cords an hour and the inclined conveyor has a circular cover which protects chips from weather. The conveyor system will be able to handle the eventual goal of Gulf States—200 cords of chips a day or 25% of its requirement.

In its development of chip sources, Gulf States has learned many things but perhaps the most important is this: If chip use is to be successful it must be stabilized. In order that it may guarantee a daily supply of sawmill chips, Gulf States deals only with reliable sawmill operations on a contractual basis.

John Kirkpatrick, forest development director, estimates that about 65,000 cords of slab wood in addition to the aforementioned chip volume are available within the Tuscaloosa area every year. About 40% of these are considered "reliable" sources. From this additional annual potential of some 26,000 cords Gulf States will add to its chips bonanza.

Chips are Dropped in Here
Link-Belt screw drives can be seen in floor of dock. At top of picture are screw conveyors leading from under rail cars; screw conveyors for chips from trucks at bottom.

Going Up!
Link-Belt rubber belt conveyor carries chips to roof of pulp mill, where they drop to cross conveyor for delivery to silos. Inclined conveyor operates from 10 hp motor, while cross conveyor needs only 3 hp motor.



LAND-CLEARING MACHINE LOOKS LIKE TANK . . . This land-clearing saw is driven by a 750 hp Allison aircraft motor and has a 10 ft. diameter circular saw on front but it has been effective in clearing heavy trees in Louisiana. The steel hull brushes off falling timber and heavy cold-steel blade was observed to cut through a 42 in. tree in 45 seconds. At right, closeup of big blade which eats up trees as though they were blades of grass.

New Trends in South

How to prepare planting site; 21 methods used in Southeast

● Two trends in South brought out in recent Augusta, Ga., meeting of American Pulpwood Assn. Southeastern section:

1. Companies are taking a more active interest in site preparation for planting seedlings.

2. Use of big, heavy and expensive production equipment, once considered a luxury, is becoming more commonplace.

Both trends are healthy—that seems to be the consensus among top woodlands people.

Said one: "A few years ago, the suggestion that a tractor and harrow be used to clear land for planting would have fallen on deaf ears. Today, the men want to know what kind of tractor and how many to buy. Getting land ready for young tree is more popular. So is mechanization. I can remember when a $10,000 expenditure for equipment would have gotten a man fired. Nowadays it isn't uncommon to spend $30,000 or $40,000 on one piece of equipment, just to test it out."

Why? For one entire day, representatives from Southeast pulp and paper companies described their site preparation methods. Without exception they were enthusiastic about results and planning to prepare more acres next year. In all, some 21 methods were named.

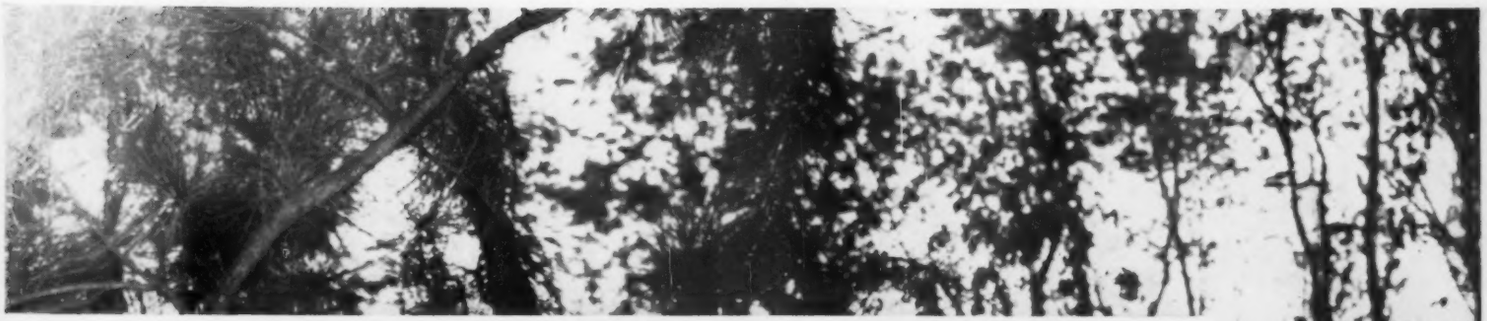
One woodlands engineer journeyed west to the Mississippi to observe a "stump-driver" in action. He was so impressed he decided to help the man who made the machine improve it—and use it on company lands. The machine, working on a pile-driver principle, drove 100 to 120 stumps an hour into the ground to a depth of 12 to 18 in. (It drove a 42 in. live oak stump into the ground in 10 minutes.)

Another machine was a gigantic, 18 ft. tall land-clearing saw developed by Dean Shields of Waverly, La. The steel reinforced "land tank" has a 10 ft. circular cold steel saw mounted on the front flush to the ground. It is driven by a 750 hp Allison aircraft engine and operates at about $30 to $50 an acre. It can clear two acres an hour, cutting stumps off at the ground. It cut a 42 in. tree in less than a minute. Mr. Shields is now adapting the saw for a diesel engine. Cut trees are deflected from the steel hull.

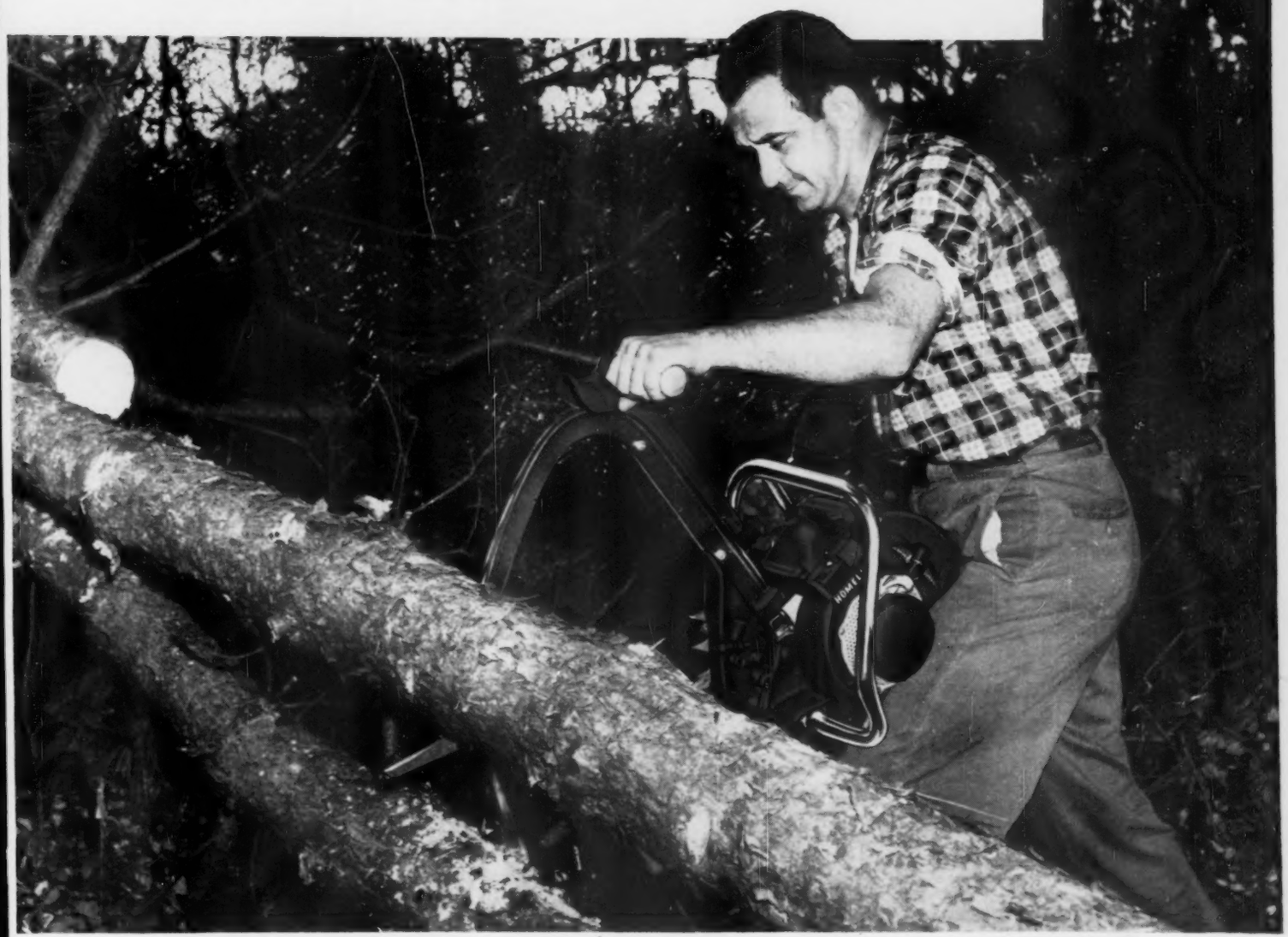
MORE CONVENTIONAL EQUIPMENT . . . widely accepted equipment for land preparing was a tractor of the TD 14 or TD 18 or D6 and D7 class equipped with a Rome Master harrow. One company reported it cleared some 24 acres a day working on two shifts with two tractors and harrows. To attack roots, the Flecko chopper was recommended.

THEY DIRECTED INFORMATIVE SITE PREP SESSION . . . RAY MALECKI, of Union Bag-Camp Woodlands Division, Savannah, and APA's Southern Logging Engineer, **JIM HOLEKAMP,** kept ball rolling at Augusta session of the Southeastern APA.

MOST POPULAR . . . Of 21 site preparation methods used in Southeast, girdling and poisoning undesirable vegetation is done by 15 mills; harrowing, only, of entire area, by 12 mills; burning area less than one year before planting, by 11; planting in fire lane plow furrows, by 9; girdling (but not poisoning) undesirable vegetation by 8; bulldozing entire area, 7; burning one year or more before planting, 6; burning less than a year before, and harrowing, 5. Most methods listed required mechanized equipment. Almost all agreed trees had a better chance for survival if land was readied ahead of time.



More *Power* Per Pound



That's the key to bigger profits from production cutting . . . more power per pound. And that's what Homelite gives you in the Model 17 Chain Saw. It's packed with power for fast cutting. You get a full 3½ horsepower delivered right to the chain. Yet it weighs only a light, light 20 pounds for easy operation. Most important, it stands up under the grind with a minimum of down time and lowest possible maintenance. 14″ and 18″ plunge cut bows or 14″ to 38″ straight blades are interchangeable. New attachments for clearing or brush cutting are now available. Get your key to bigger profits. Send for information on the complete line of Homelite Chain Saws today

HOMELITE

A DIVISION OF TEXTRON INC.

7702 RIVERDALE AVE., PORT CHESTER, N. Y.

Homelite builds and sells more chain saws than any other company in the world.

New Carthage Slab Debarker in Action
Bark flies as this new slab debarker peels it away in Southern sawmill.

Pilot Model of Soderhamn Slab Debarker
Belt-driven debarker is 5 ft. high, 7 ft. long, runs on 20 hp motor.

Metal Detector Got "Shakedown" in Sweden
Soderhamn Prs. Gus Jacobson shows "MetalMatic" machine to P&P Editor Al Wilson. When metal-ridden log goes through ring, horn blows and small tube sprays paint on log. Steel plates flip infected log off conveyor.

What's New in Slab Debarkers

Barker designed by Virginia lumberman for Carthage; Soderhamn readies slab debarker and metal detector

• With the accent on slab chipping, more and more sawmills are turning to inexpensive, lightweight slab and log debarkers and small chippers as a source of new revenue. Recent surveys show that only about 40% of the volume of the average sawlog ends up as finished lumber. By reclaiming slab and edge waste, sawmills can push this up to about 60%, since chips amount to some 20%.

Two debarkers currently are earning a lot of attention from woods leaders in the South. One, produced by Carthage Machine Co., was developed by John Potts of the Potts Lumber Co., Barhamsville, Va. The other, now ready for the market, was engineered and developed by the Soderhamn Machine Mfg. Co. at Talladega, Ala.

What's New at Soderhamn . . .

During a recent visit to the Talladega plant of the Soderhamn company, two PULP & PAPER editors were taken on a tour of the foundry and plants by President Gus Jacobson. There were two interesting new developments here: A new slab debarker, fully tested in the field and ready for the market; a new metal detector so sensitive that it "beeped" when a nail was thrown through the detector ring. Other things are also in the wind. Engineers here are also working on a log selector which will sift logs out and run them through the Soderhamn cambio debarker one at a time.

The new slab debarker, designed to fit neatly into the wastewood conveyor of a small sawmill, is compact and simply designed. A 20-hp motor drives the feedwork and flailhead. Only 5 ft. high and 7 ft. long, the machine has a linear speed of 120 ft. and a capacity of 1½ to 2 cords an hour. The debarker has a belt drive and has been in operation in a Southern sawmill for several months. According to Mr. Jacobson, it now operates smoothly and efficiently with hardly any splintering or shives.

Soderhamn's metal detector, called the MetalMatic, was developed in Norway and has been in operation for two years in Sweden. The machine is so designed that it blows a horn and

sprays a paint stripe on a metal-infected log. After leaving the magnetic field, logs containing metal are flipped either to right or left, depending on the sawmill or pulp mill operation, by rising steel plates. Clear logs move straight through the machine, which can be located in any conventional conveyor. Soderhamn guarantees $50 towards maintenance of the machine every year and it sells for less than $5,000.

How New Potts Debarker Works . . .

A great deal of interest has also been shown in the Carthage slab debarker developed by John Potts. This machine removes bark by cutting rather than flailing. Three heads are hydraulically adjusted by the operator as the log is fed into the machine. The heads drop around the contour of the log and are each equipped with knives welded into a steel roller chain which travels across the log at about 1,000 ft./sec. "Give" in the chains permits a slight overlap to complete barking.

Two sets of grooved rolls feed slabs into the barker at about 55 to 90 fpm. This feed is controlled by a foot switch and may be stopped and reversed any time by the operator. The barker, which operates most effectively on long slabs, will take anything over 5 ft. long and up to 16 in. wide and 7 in. thick. The machine weighs 4,000 lbs. and requires no anchor bolts to keep it in place. Maintenance is low because of the compact, simple design of the barker.

Oscillating Barker, Horizontal Chippers, To Supply New Montana Noodle Pulp Mill

• A Hansel oscillating-type hydraulic barker and two Hansel horizontal chippers are being built for Anaconda Co. Lumber Dept., Bonner, Mont., to supply chips for the new Waldorf Paper Products 250-ton kraft noodle pulp mill near Missoula, Mont.

The Anaconda Co., long a major operator in the mining world, will be one of eight or more sawmill suppliers to the first pulp mill to be built in the Treasure State.

The Bonner mills are 7 miles east of Missoula. Waldrof's pulp mill is already under construction in Frenchtown Valley, 13 miles northwest of that state university town. Pulp, made from fir, spruce, pine and larch, will be shipped in nodular form about 1,000 miles to Waldorf's mills in St. Paul, Minn., to make liner board. A cylinder machine there has been changed over to Fourdrinier and production will be substantially increased.

Anaconda, long famed in mining, has for years been interested in better utilization of its vast timber holdings for pulp and has carried on research in cellulose.

Construction has started on its barking and chipping plants and first chips will be made about May 1. Its mills at Bonner now make ponderosa pine and larch lumber, box shooks, lath and mouldings. It estimates its chip shipment to Waldorf will be on the basis of 200 units per day of 16 hours. Two other companies, Intermountain Lumber and Western Montana Lumber, expect to ship 50- to 60,000 units (equivalent to about 40,000 cords) annually from their 7 mills. Thus. Anaconda will be supplying an amount about equal to that of the other two companies combined.

Anaconda completed a contract with Hansel Engineering Co., Seattle, covering the entire equipment list for barking and chipping. The barker will handle logs up to 48 in. diameter. Its chain speed will be about 80 fpm. This will permit marking of 400,000 bd. ft. of logs in two 8-hr. shifts.

A 1,000 hp Bingham pump with a 150 hp booster pump will supply water to the barker.

Slabs and edgings as well as pulp logs will pass through two horizontal Hansel chippers, one 75 in. and one 54 in. The larger one will make chips from materials from the sawmill. The smaller one will process wood leftovers from the Anaconda timber framing plant.

Chips will pass over a Rotex screen and be blown to a loading station with Rader pneumatic equipment.

ST. REGIS PLANS . . . St. Regis Paper Co., with plans to build Montana's second pulp mill and a paper mill, too, about 150 miles northwest of Missoula, announces that its 2½ to 1 exchange of St. Regis for J. Neils Lumber Co. common stock has been virtually completed (98⅛% Neils stock deposited).

St. Regis will proceed to install barkers and chippers at the Neils sawmills in Libby and Troy, Mont., and Klickitat, Wash. Their early installations are expected to add materially to Neils earnings. Neils sales of lumber and logs in 1955 totalled $19,000,000. Two-thirds of its 300,000 acres of timber are in northwest Montana where a 400-ton pulp and paper mill is planned.

New Chain Flail Debarker Developed in Northeast

A new type of practical log debarker is making its appearance in the Northeast. Developed by John C. Eaton of Eaton Lumber Co., Rochester, Vt., the original debarker has been in continuous operation since June 1, 1955.

Features: Chain flail type, with stationary chain flail head which is hydraulically raised or lowered. Infeed and outfeed is by a typical sawmill carriage. To date 20 units are in operation or being installed in the Northeast.

According to the American Pulpwood Assn., the unit's simple construction meets the needs of small sawmill operators but construction details have not been slighted. Low maintenance cost has also been reported.

New Waste Chipper Ready for South

A horizontal-feed, 6-knife wastewood chipper with several innovations in design is announced by Wilco Machine Works, Inc., of Memphis, Tenn. The machine was designed and will be manufactured by Sumner Iron Works for distribution through the Southern firm.

The new chipper has a 53-in. diameter disc with either overhead or bottom discharge. Infeed spout, believed by the designers to be the biggest for this diameter disc, is 8¾ in. high, 14⅛ in. bottom width, 19 in. across the top. The knife angle has been designed to eliminate danger of feeding jam. According to Wilco executives, the machine was designed to "service smaller operations where initial investment must be kept low without sacrificing production or chip quality."

A one piece carrier-wearplate of abrasion-resistant, 1½-in. thick steel covers the entire area between knives and disc face and the disc is solid rolled steel. Shaft diameter exceeds 5 in. and the spout has two removable anvils. The chipper will be built initially at the Everett, Wash., plant although Southern manufacture is planned in the near future.

Pulpwood Personals

M. H. COLLET, transportation and procurement manager of the Forest Products Division, Olin Mathieson Chemical Corporation, West Monroe, La., announces appointments of **RALPH W. LAW** as assistant manager of pulpwood procurement and **FLETCHER W. ASHCRAFT** as assistant to the president of the Arkansas & Louisiana-Missouri Railroad. Mr. Ashcraft, who had been assistant wood procurement superintendent at West Monroe, has transferred to the A&LM's Monroe office to assume his duties in the newly-created position of assistant to **ROBERT F. HUMBLE,** president of the Olin Mathieson-owned line. Mr. Law, formerly head forester at the company's Huttig, Arkansas, mill, is being transferred to West Monroe in his new assignment and will report to **C. E. WILDS,** manager of pulpwood procurement. . . .

L. C. MAY, logging supt., has been named acting head forester at Huttig and will report to Forestry Manager **TRAVIS MACCLENDON.** In two other appointments, **P. P. LYNCH** was named district pulpwood procurement manager for Mississippi, with temporary headquarters at the Walthall Hotel in Jackson, Miss., and **I. H. BUTLER** was appointed district pulpwood procurement manager for southern Arkansas and North-Central Louisiana with headquarters at West Monroe.

G. K. SEED, formerly asst. superintendent for Ontario-Minnesota Pulp & Paper Co., Patricia Concession, has joined the operating staff of Dryden Paper Co., according to **NORMAN McMILLAN,** woods manager. Mr. Seed was born and received his early education in northwestern Ontario and took his forestry degree at University of New Brunswick.

CHARLES GOSSELIN has been named vice president in charge of woodlands, St. Raymond Paper Ltd., with mills at St. Raymond and Desbiens, Que. Announcement of his appointment was made by Vice President and Gen. Mgr. **R. G. JOHNSTONE,** who states that **SIDNEY FRANCIS** has been appointed Div. Woods Mgr. Desbiens division, and **HECTOR MORIN** Div. Woods. Mgr., St Raymond Division.

HUGH J. HODGINS, one of Western Canada's best known foresters, who resigned from Pacific Mills some years ago to enter consulting practice in Vancouver, has rejoined the Crown Zellerbach organization to direct all timber operations for the company, including long-range forest planning, under **O. D. HALLIN,** vice president, timber. His newly created job is manager of the timber department. Mr. Hodgins has been consultant on pulpwood development in Australasia as well as in Canada and the U.S.

JIM PRICE, former asst. dist. wood procurement supt. at International Paper's Natchez mill, has been promoted to woodyard coordinator, where he will aid the scaling dept. in checking woodyard and mill scales at Natchez, Bastrop and Moss Point. . . . **RICHARD C. ALLEN,** chief forester of the A. DeWeese Lumber Co., Philadelphia, Miss., has been elected president of the Mississippi Forestry Assn. He is a graduate of U. of Georgia. . . .

ROBERT B. FRESE, member of Auburn University's first forestry school graduating class in 1948, is assigned to the newly created position of wood procurement supervisor for the new Demopolis, Ala., market woodpulp mill being built by Gulf States Paper Corp. . . .

Faith in Future of Alaska

Ex-Governor B. Frank Heintzleman of Alaska, former regional forester for the Territory, will continue in the development picture for more pulp mills in the Territory. On Jan. 3 he retired from 46 continuous years of public service. He will begin a personal project of interesting groups and individuals in improving all the industries and general welfare of Alaska, in the status of a private citizen and not as a paid consultant.

Good Safety Record Is Shown in Logging

A Crown Zellerbach Corp. logging division has built up a remarkable record of accident-free days stretching over nearly a 2-year period. For the third time since 1950 the company's Columbia logging division at Vernonia, Ore. completed a calendar year without a lost time injury.

In a safety string dating from early 1955, a 50-man crew of loggers, truck drivers and foresters harvested and hauled 7,306 truck loads of logs totaling 27 million bd. ft. Auxiliary functions included felling thousands of snags to fireproof 10,902 acres of tree-farm land and planting 208,000 seedlings on 395 acres—all accomplished in 698 safe days totaling 157,197 man-hours.

There have been no serious accidents involving log trucks since hauling began at the division in 1951, according to Resident Supervisor Glenn Hawkins. In that period company drivers wheeled a fleet of from four to fourteen logging trucks 887,810 accident-free miles, moving 15,150 log loads.

This division received a Forest Products Safety Conference award a year ago, thus being recognized as having the best record for an operation of its size in the nation.

Joins Sales Development Unit

W. R. "Wally" Korth has joined the Sales Development Section of International Harvester's Construction Equipment Div. He will be concerned with application of construction equipment to the pulpwood and logging industries.

As a member of the pulpwood and logging group of Sales Development, in Chicago, he will contact producers in the central and north central sections of the country.

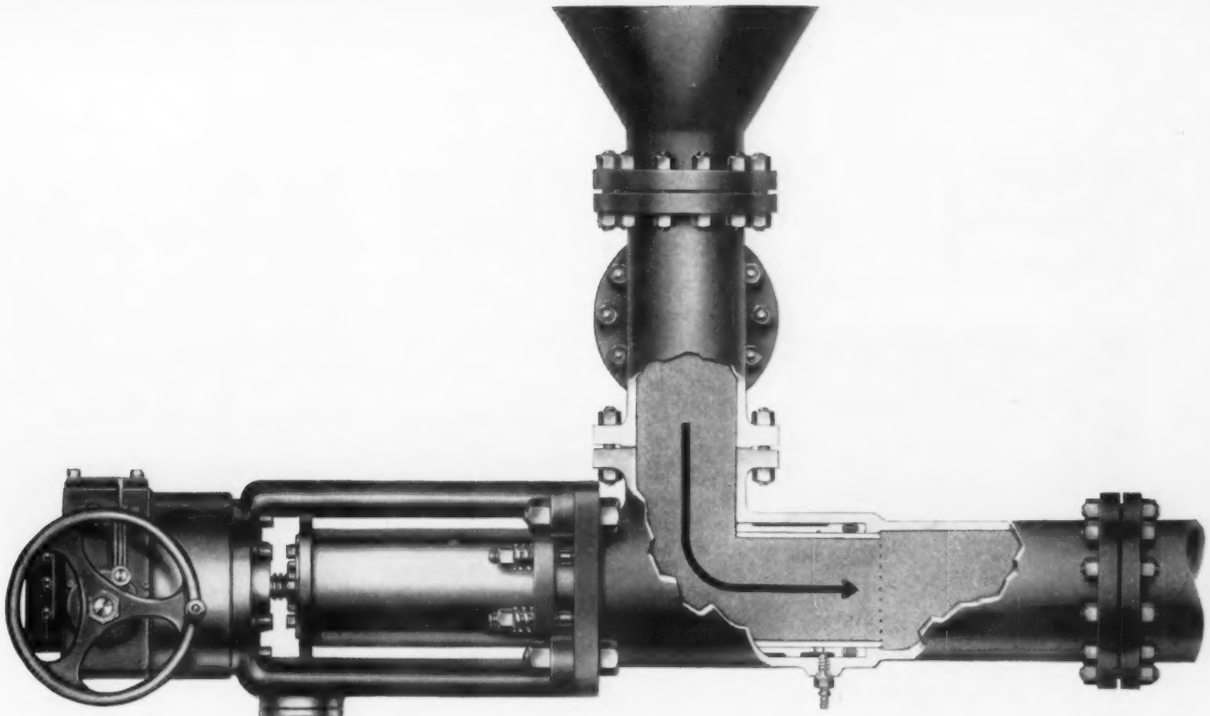
Mr. Korth comes to his new job from the Delaware State Forestry Dept., where he was a service forester. One of his duties was responsibility for supervision of pulpwood and logging industries. He also has served in woodland management and as a technician on private and public timberlands. He was graduated in forestry from Pennsylvania State College.

Homelite Saw Plant In Gastonia, N. C.

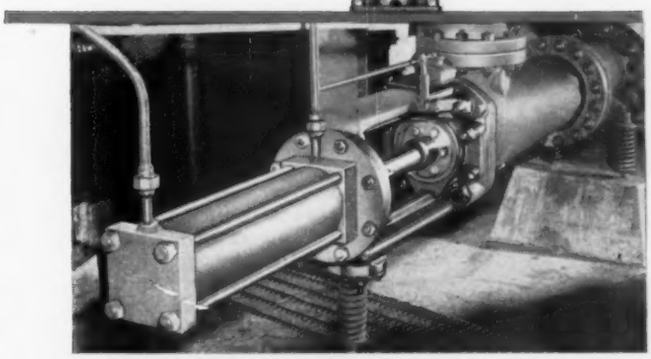
Homelite, a division of Textron, Inc., of Port Chester, New York, is building a new modern chain saw plant in Gastonia, N. C., to employ between 400 and 500 men and women. This summer all chain saw production will be transferred there from Port Chester, N.Y.

DROTT IN ACTION is the subject of six new bulletins on International Drott Skid-Shovels and attachments. Ask for: No. K-656, a general catalog; A-100 for Skid-Grapples; A-200 for grubber blades; A-400 for Bullangledozer blades; A-500 for rock forks and A-300 for scarifiers. Write to International Harvester Co., 180 North Michigan Ave., Chicago 1, Ill.

HYDRAULIC LOG LOADERS produced by Hiabob are shown in field operations in a bulletin available from Diesel Power Equipment, Ely, Minn. The new Model B incorporates 200% more main ram bearing area, longer swing arm, 12-in. longer boom, roller bearing sheaves and larger capacity pump.



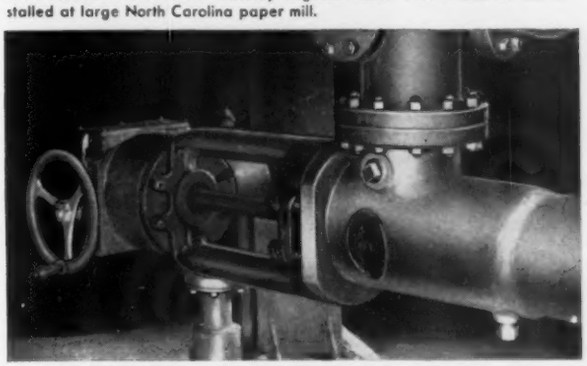
full, free digester discharge



HYDRAULIC-OPERATED Yarway Digester Blow Valve—one of six installed at large North Carolina paper mill.

Digesters blow fast and clean with YARWAY Seatless Blow Valves.

The hollow sliding plunger has no pockets where wood chips or tramp materials can hang up.



MOTOR-OPERATED Yarway Digester Blow Valve—one of eight installed at large Canadian paper mill.

Scores of pulp mills report *lower operating costs* and *increased production* due to YARWAY Digester Blow Valves. One large mill found *savings in operation and maintenance the first year more than paid the cost of their 4 new Digester Valves!*

YARWAY Seatless Digester Valves can be furnished either with electric motor or hydraulic cylinder units. Both are remote controlled. Bulletin B-441 gives the whole story. Write for it.

YARNALL-WARING COMPANY
103 Mermaid Avenue, Philadelphia 19, Pa.
BRANCH OFFICES IN PRINCIPAL CITIES

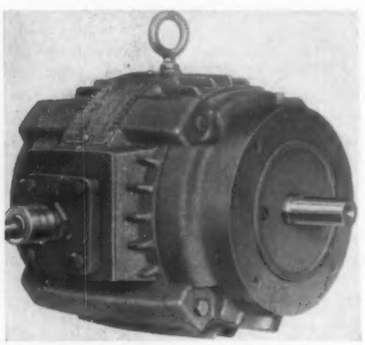
YARWAY ·· DIGESTER BLOW VALVES

NEW EQUIPMENT and SUPPLIES

New Patton Drives Installed at Mead

Seven paper mill machine drives (picture above), produced by Patton Manufacturing Co., Inc., 1802 W. Pleasant St., Springfield, O., were recently installed on No. 3 machine at The Mead Corp., Chillicothe, O., for the couch, first press, second press, smoothing press, main dryer, first calender and second calender.

The Patton paper mill machine drive is a compact unit of simplified design. Patton drives are tailored to the specific requirements of the mill and with ample reserve capacity for normal operating and over-load requirements. The basic unit can be furnished for extended or short-coupled drives. Other features include split-taper cone or V-belt pulley and advanced design belt-shifter with manual or remote control.

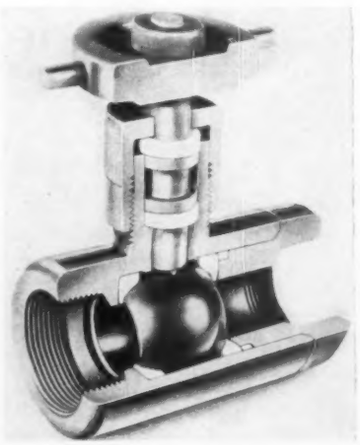


New Line of A. C. Motors

Reliance Electric & Engineering Co. offers a new line of totally-enclosed air-over a-c motors to produce varying horsepower according to application of varying air velocities. This is accomplished by the cooling effect of air flow over the motor frame created by the fan or blower it powers. Power output can thereby be increased without exceeding the rated temperature rise of the motor. Features include castiron ribbed frame construction, oversized double-shielded ball bearings and metermatic lubrication with automatic grease relief. Heavy formvar nylon coated magnet wire is used for coils, with six coats of special insulating varnish. The motors are available in new NEMA frame sizes from ½ through 30 hp and may be operated on 208 volt network.

Handling Corrosive Fluids?

Vanton Pump & Equipment Corp., has a pump wherein fluids handled are in contact only with Teflon or Kel-F. It is designed for use with many extremely corrosive fluids including those which could not be handled previously with other plastic or stainless steel materials of construction. Write Vanton at 201 Sweetland Ave., Hillside, N. J.



New PVC Ball Valves

Jamesbury Corp., Worcester, Mass., introduces a new all polyvinyl chloride valve (picture above) in its successful "Double-Seal" ball valve design. This new valve combines an outstanding design principle with a new material for handling corrosive and other difficult fluids. Sturdy construction permits use in many plastic or metal piping systems for either vacuum or pressure service.

Full flow, quarterturn shut-off, with thousands of leak-tight cycles and no maintenance are outstanding features. Valve seats are easily replaceable. Rating is 150 psi at ambient temperatures and 50 psi at 130° F. Jamesbury offers an all PVC valve complete with air operator for remote control and sequence operations.

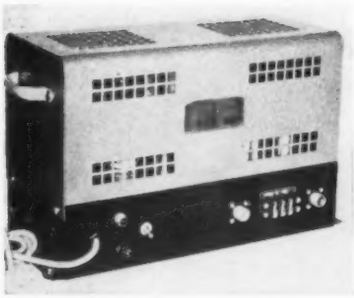
New Pressure Transducer

A new, small, low-cost pressure transducer by The Bristol Co., Waterbury, Conn., is designed for reliable and accurate service with a wide variety of fluids, including all jet and piston engine fuels, lubricating and hydraulic oils, and air, carbon dioxide and oxygen. Output signals may be either linear or to any desired curve, as required for actuating appropriate control or measuring system. The transducer will normally be available in pressure ranges of from 0-2 psi to 0-250 psi, although other ranges can be supplied as required. Additional details and prices are available from the company, Waterbury 20, Conn.

New Dual Spindle Lathe

Boye & Emmes Machine Tool Co. offers a new dual spindle lathe designed for turning both large diameter and small diameter work, described as virtually two machines in one.

An upper spindle provides a swing-over-the-bed of 60 in. and a lower spindle a swing of 4 in. For the operator, the point of contact between work and tool is always within easy sight and reach. Operator may engage or disengage the various drives at will (under the protection of a mechanical safety-interlock which prohibits machine-damaging movements). The lathe supports 15 tons between centers. Address The Boye & Emmes Machine Tool Co., 81 Caldwell Drive, Cincinnati 16, O., for Bulletin No. 2513.



A Transient Converter For Flowmeters

Fischer & Porter Co. announces development of a transient converter for use with turbine type flowmeters. The converter accepts a sinusoidal type input signal of varying frequency and provides either an analog output for recorders and oscillographs or a digital output to counters and computers.

Input frequency range for the new unit is from 0 to 600 cycles per second, operating from a 500 ohm source impedance. The output is a 0 to 100 millivolt analog signal or a 10 volt positive pulse (at 8 times the input frequency) to digital devices.

The unit has a short term analog accuracy and linearity of ±0.5% and a long term accuracy of ±3%. Rise time is a 10 milliseconds for a 40 to 600 cps step. Accuracy of the digital output is absolute.

The converter features plug-in subassemblies for easy maintenance. Further information and descriptive literature are available by writing Fischer & Porter Co., 950 Jacksonville Road, Hatboro, Pa.

New Automatic Power Feed Electro Magnetic Drill Press

Automatic power feed (picture above) has now been added to a revolutionary Portomag (electro-magnetic) drill press. While the electro magnetic base holds the drill press in position, the new power feed makes it possible for the operator to run the drill point down to the center punch mark . . . turn on the automatic feed and let the drill do all the work.

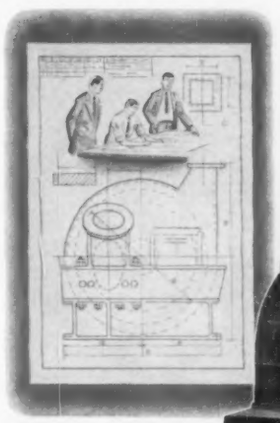
Power feed can be engaged or disengaged at any time during the drilling operation, and the depth of cut per revolution, can be set according to the size of drill bit being used. For further information write: Portomag, Inc., 1511 East Nine Mile Road, Ferndale 20, Mich.

A New Conveyor Chain

Steel conveyor chain, each link made with a wing attachment, has recently been brought on the market by Robert A. Main & Sons, Inc., 257 Pascack Road, Paramus, N. J.

This new pin type chain, made of forged quality steel and heat treated, is manufactured for maximum strength conditions and will stand extra hard wear and shock. It can be furnished for acid or heat conditions using corrosion or heat resistant materials. It is easy to take apart or assemble due to its simple design.

Each link has a wing attachment making it easy to attach wood or metal conveyor slats for all types of duty. It can be used in single or multiple strands. Due to its uniform size, links



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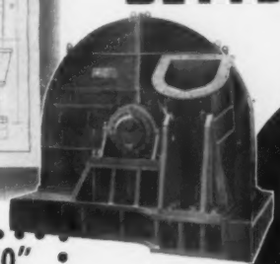
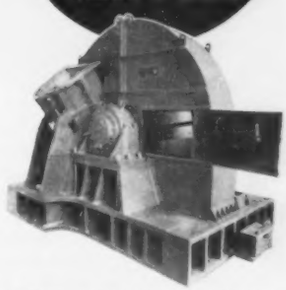


MURCO ROUND LOG PULPWOOD CHIPPERS

Sizes 36" to 150" Disc Diameters

MURCO Round Log Pulpwood Chippers are designed to include the most desirable features for today's production requirements . . . the result of long and careful study of the various features that contribute to outstanding chipper performance in producing more and better chips at less cost . . . less sawdust, fewer slivers, freedom from repairs yet at the same time having production records of 100 cords or more per hour. The MURCO heavy design construction reduces vibration . . . MURCO Round Log Pulpwood Chippers are compact. Write today for new MURCO Chipper booklet.



MURCO 150" 8-Knife Whole Log Chipper

MURCO

D. J. MURRAY MANUFACTURING CO.

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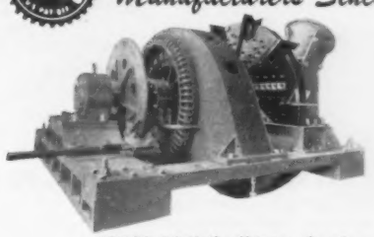
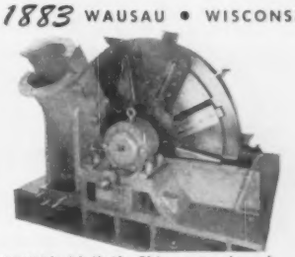


MURCO 10-Knife Chipper showing Synchronous Motor Mounting and Brake



MURCO 10-Knife Chipper equipped with V-Spout (shown in open position) and Blowing Vanes on Disc

need not be matched and it is available in standard pitches. Sprockets and complete conveyor aprons can be supplied using this chain.

Low Cost Metering Pump

A low capacity, medium pressure unit which accurately proportions various solutions or chemicals is described in Sup. Bulletin 1105-3 issued by Proportioneers, Inc., 345 Harris Ave., Providence, R. I.

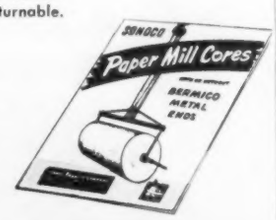
The many unique features of this proportioning pump, known as the Proportioneer-Model 1105, are listed, together with descriptive data, capacity table, cutaway-dimension drawings, etc. The Model 1105 is available in six types covering a capacity range from 0.12 to 20 gph. Volumetric accuracy is guaranteed from maximum to 1/15 of maximum displacement within plus or minus 1.0%.

For complete data, request Sup. Bulletin 1105-3. Send your request to Proportioneers, Inc., 345 Harris Ave., Providence, R. I.

Core problems? Solve them here!

SONOCO offers fast delivery on specialty cores for wax paper, cellophane, fine paper, carbon paper, gummed tape, adding machine and cash register paper, etc. Outside diameters held to close tolerance with smooth or rough surfaces; parallel or spiral wound. Sizes ¼" O.D. and up, ⅛" I.D. and up, in lengths from ½" to 24-ft. or longer, with any practical wall thickness. Supplied plain, solid colored throughout, or with special outside or inside wrap. Can be printed inside, outside or on ends.

Also a complete line of paper mill cores, with or without Bermico Metal Ends, returnable and nonreturnable. Standard and special sizes.



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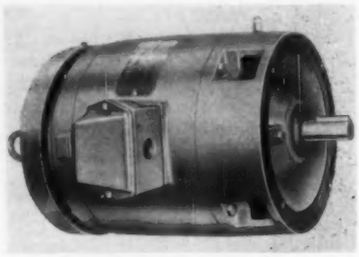
New "Thermopruf" Chain For Kilns

A new "Thermopruf" chair system for wet process kilns in pulp mills is announced by Allis-Chalmers Mfg. Co. Components are said to provide longer wearing qualities, greater corrosion and heat resistance, include newly designed links and shackles.

The links are joined by inserting one leg of an open "Thermopruf" link through the loop made by legs of preceding links after they are pressed closed in an ordinary vice. This results in less downtime for chain make-up and replacement. Also part of the system is a newly designed shackle and connecting link. The shackle resembles a heart outline with two valleys, one for each end link. This double arrangement keeps end links from riding each other.

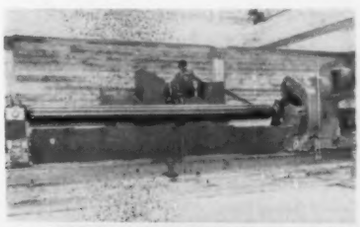


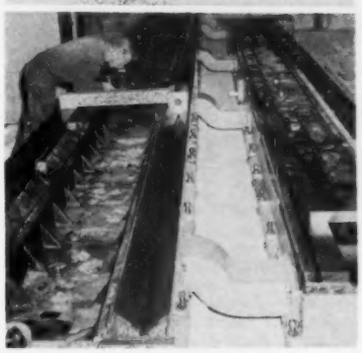
New Vertical Pump Motor

A complete line of totally-protected, vertical solid shaft P-base motors (as above) for all vertical pump installations is announced by Reliance Electric & Engineering Co., Cleveland. The new motors, with normal thrust bearings in all sizes from 1 to 40 hp and high thrust in sizes from 1 to 15 hp, are available in protected, totally-enclosed, or explosion-proof enclosures. The standard enclosure for Reliance Explosion-Proof P-Base Motors meets Underwriters' Laboratories specifications for performance under conditions covered by Class I, Group D, and Class II, Groups E, F and G. Designed for indoor and outdoor installations, all of the new Reliance P-Base Motors are corrosion-proof for long, safe operation under adverse conditions.

Microflo Valve Tungsten Carbide Plugs

Hammel-Dahl Co. announces Spline plugs made of Tungsten Carbide in 25 interchangeable sizes provide predictable flow control in a formerly "impossible" low flow range. Product quality in full scale processes can be improved by the more accurate metering of minute flows, says the company. Pilot plants and laboratories can now scale down their process to more manageable proportions. Engineers should write to H-D at 175 Post Road, Providence 5, R. I.





Views and Description of New Roll Grinder

One of the few roll grinders in Canada, mounted on a concrete block supported by coil springs, has been installed in a new building at Powell River, B.C., adjoining Powell River Co.'s No. 7 and No. 8 newsprint machine room. These two pictures show an overall view—also a picture of Millwright John Willis leveling the roll grinder bed.

The mounting was designed by H. G. Acres & Co., Niagara Falls, and employs Korfund springs manufactured by Korfund Co., Long Island City, N.Y.

Function of the 198 coil springs supporting the 200-ton concrete base for the 50-ton Churchill roll grinder is to prevent the vibration of the paper machines from affecting the accuracy of the grinding job. Arranged in 22 sets of nine springs each, the vibro-isolators enable the 72x336 in. traveling wheelhead type roll grinder to grind rolls weighing up to 50 tons (like the bottom calender roll on Powell's ninth machine now nearing completion) to an accuracy of .0003 in. Such accuracy is, of course, as important to the efficiency of an entire paper machine as it is to the desired smooth finish of the newsprint it produces.

Manufactured by the Churchill Machine Tool Co. of Manchester, England, the $50,000 roll grinder is equipped with a self-contained motor drive, wet grinding equipment and swarf separator.

...with new *ESCO* "Lap Joint" Digester Strainers

NO "GAP PROBLEM"—overlapping strainers absolutely eliminate "gap".

NO CLEANING PROBLEM—screen plates are flush-mounted with surface of frame—perforated holes do not overlay structural members. Necessary cleaning is easier than ever.

NO "FITTING PROBLEM"—installation in carbon steel, alloy clad or alloy lined digesters can be made by welding in small support lugs at the corner of each strainer. Brick-lined digester installation is made with shoulder bolts and Z-bar supporting-ring segments. *ESCO "Lap Joint" Strainers are interchangeable among all diameter digesters.*

CORROSION PROBLEMS MINIMIZED—because "Lap Joint" Strainers are available in *ESCO* Alloy 40 or 45 (ASTM A296-49T, Grade CF8 or CF8M) and other super alloys such as Inconel with proved resistance to all types of sulfite or alkaline cooking liquors.

Check Our Stock For Fast Delivery. Call your nearest ESCO Office or write direct.

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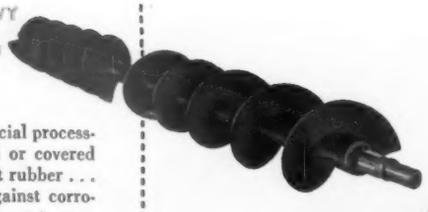

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STOP
VALVE
CORROSION
at lower cost

There's an ACE hard rubber, rubber-lined, or plastic-lined valve for every corrosion application. Sizes from 2" to 24". Diaphragm, gate and check types. Free *Bulletin CE-52* lists chemicals that can be handled.

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ACE Rubber-Lined Steel . . . strength and pressures of steel plus chemical resistance of hard rubber. Excellent for alkalis, most inorganic acids, many organic acids, all salts, bleaches. Sizes 1¼" to 24" and up. *Bulletin CE-52.*

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ACID PAIL

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ACE processing equipment of rubber and plastics

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New Mill Manager in South

ED H. NUNN, who has been appointed resident mgr. of the new $31,000,000 Francisville (La.) Paper Co., which will produce 78,000 tons a year of machine-coated book paper about 20 miles north of Baton Rouge. Crown Z and Time Inc. are partners in the venture. Mr. Nunn has been manager of Crown's Carthage, N.Y., mill and prior to that was at West Linn, Ore., many years. He started there as chemist in 1930.

Dr. Art Parrett Dies

Dr. Arthur N. Parrett, 60, vice president in charge of research and development for Rayonier Inc., died suddenly Dec. 27 in Seattle, while on a business trip.

With Rayonier since 1932, he directed its research and development laboratories in Shelton, Wash., Vancouver, B.C., and a new million-dollar facility in Whippany, N.J.

Born in Marshalltown, Iowa, he received degrees from the Universities of Minnesota and Pittsburgh. He held many patents relating to cellulose manufacturing and use. His widow is the former Doreen Aldwell. They moved to New York from Shelton, Wash., last March.

Adds Seven Branch Offices

Seven new branches were opened in Eastern and Southeastern cities during 1956 by The Foxboro Co., Foxboro, Mass., manufacturers of industrial instruments, bringing the company's total number of offices to 52.

Eastern offices opened and sales engineers assigned: Augusta, Me., **J. G. BRAVACOS**; Richmond, Va., **G. E. CLARK**, branch manager; and North Tonawanda, N.Y., **J. G. DOBSON**, branch manager. Southeast offices and sales engineers: Chattanooga, Tenn., **W. H. RHYNE**; Pensacola, Fla., **R. F. SUTTON, JR.**; Tampa, Fla., **F. J. STEVENS, JR.**; and Memphis, Tenn., **D. C. ROSSER.**

Commenting on the expansion, **H. O. EHRISMAN**, general sales manager, pointed to "the pressure for ever-greater production and increased product uniformity" as a major stimulant in the increased demand for instruments.

PICTURES OF PEOPLE
IN THE NEWS

Skinner is Chief at Beloit; Gochnauer Goes South

Pres. Harry C. Moore and Lloyd Hornbostel, vice president in charge of engineering, announce appointment of E. STERLING SKINNER (left) as chief engineer of Beloit Iron Works.

Mr. Skinner came to Beloit after graduation from U. of Wisconsin in 1933. He has served as purchasing engineer, and assistant chief engineer. During World War II he was closely associated with Beloit's war production program. He succeeds E. D. Beachler, promoted recently to vice pres., engineering.

HARRY W. GOCHNAUER (right), is now devoting full time to engineering phases of the two-machine pulp and paper mill which Marathon Southern Corp. is building at Naheola, Ala. In order to do so, he retired as chief engineer of Marathon Corp., being succeeded in that post by George Wachter, asst. chief engineer of the parent firm for the past year. Mr. Gochnauer, native of Appleton, Wis., had been chief engineer of Northern Paper Mills from 1921 until after it was merged with Marathon in 1953. Mr. Wachter, native of Menominee, Mich., has been with Marathon since 1952, following 6 years with a nitrate industry in Chile.

Appointed to New Posts

M. C. "TED" BELZ (left) formerly with Johns Manville and Omholt Bros., has joined Chemsteel Construction Co., Inc., as manager of Industrial Mastic Division. He will handle acid resisting mastic along with the company's regular services from Philadelphia.

GEORGE D. WILLIAMS (right) appointed manager of Bailey Meter Co.'s Boston District Office. He succeeds P. T. Reuter who died Oct. 5. Mr. Williams joined Bailey Meter in 1946, was graduated from Worcester Polytechnic Institute.

In Huber Company News

GERALD W. HARRIS (left) has been named vice president of J. M. Huber Corp. in charge of industrial products dept., announces Pres. Hans W. Huber. Since June 1954, Mr. Harris had been assistant to the late R. H. Eagles, vice president, who died recently. Huber's industrial products dept. is responsible for sales of carbon blacks, clays and rubber chemicals to paper, and other industries. Mr. Harris has been with Huber since 1947.

CLAUDE A. RABY (right), who has been with the Huber Corp. in the Middle West, in Chicago and more recently out of Appleton, Wis., serving pulp and paper mills in that area, has moved to company headquarters in New York City (100 Park Ave.). A native of New Hampshire, he received a master's degree in chemistry from the Univ. of Michigan.

In New Posts in Pennsylvania

WILLIAM H. VAN HORN (left) has been appointed manager of sales for Speedline Stainless Steel Fittings Div. of Horace T. Potts Co., Philadelphia. He will assume responsibility for sale of Speedline fittings throughout the country. He joined Potts in 1940.

J. Lynne Ferner, manager of West Virginia Pulp & Paper Co. mills at Tyrone and Williamsburg, Pa., announces promotion of WILLIAM S. HUNTER (right) to new post of assistant to Henry C. Schramm, chief plant engineer at Williamsburg. Mr. Hunter is former project engineer at Tyrone. A graduate of Lehigh U., he joined Westvaco in 1953.

EDWIN LYON, new Sales Engineer, Albany Felt Co., succeeding George Fitch, retired. Mr. Lyon, native of Maine, graduate of Dartmouth, joined Albany in 1952. Will cover Maine, parts of Mass. and N.H.

Realignment of Sales

Realignment of the Eastern Sales Dept., American Potash & Chemical Corp. is announced by William J. F. Francis, vice president in charge of sales.

Under the new arrangement the department will operate as a Heavy Chemicals Division and an Industrial Chemicals Division. ED M. KOLB (left) has been named as general sales manager of Heavy Chemicals. DR. AL J. DIRKSEN (middle) former director of market development, has been appointed general sales manager of Industrial Chemicals. Both headquarter in New York.

William M. Clines (right) former western sales manager, was named general sales manager, western, to handle all sales in the west. Mr. Clines will continue to headquarter at executive offices at Los Angeles.

Heavy Chemicals Division will be responsible for eastern and export sales in borax, potash and sodium sulfate (salt cake). Industrial Chemicals Division will handle eastern sales for lithium, boron, Tronacarb, chlorates, perchlorates, manganese dioxide, and new products.

In News from Southern California

G. ELMER EMIGH (left), who made such a wonderful recovery in health after announcing retirement last year that he has resumed his calls on Southern California pulp and paper mills for The Sandy Hill Iron & Brass Works, assisting R. A. Hatch, who covers the rest of the Coast territory for general machinery lines.

ARTHUR R. HOOKER, JR. (middle), named division purchasing agent of Pioneer-Flintkote Co., Los Angeles, to succeed Arthur E. Carlson, retired. Mr. Hooker has been with Flintkote 10 years, as asst. div. purchasing agent for the past four. He graduated from U. of So. Calif. in 1942, served four years as supply officer in U.S. Navy.

PETER J. METZ (right), promoted to supt. of Los Angeles plant of Western-Waxide Specialty Packaging Div., Crown Zellerbach, according to David Benjamin, general mgr. Mr. Metz started in 1949 as packaging engineer, recently was divisional tech. supt. of Production Research and Development Lab, San Leandro, Calif.

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STANDARD BUILDING VANCOUVER, B. C.

STRICTLY PERSONAL

Pacific Patter

JOHN ARAM, who recently joined Weyerhaeuser Timber Co. as assistant to the president, and **ROBERT V. HANSBERGER,** who resigned from Western Kraft Corp. to succeed Mr. Aram as Boise Payette Lumber Co. president, were occupants of an airplane forced down on an isolated Utah trail during a December snowstorm. After spending the night in the downed plane, they managed to take off when the storm abated about noon. Communications were impossible while grounded because the surrounding mountains blocked transmissions from the plane's VHF radio transmitter. Private and government pilots who undertook a widespread search were "electrified" by a "safe" report radioed from the plane after it became airborne. . .

RUSS VOGNILD, assistant western sales mgr., Hooker Electrochemical Co., Tacoma, Wash., and wife, Eva, took a typical American vacation, traveling 10,000 miles and covered 30 states. They both agree with Poe and his Raven, "Nevermore" . . . . **JOHN SHEDD,** chief chemist, Simpson Paper Co., has received his diamond to add to his Old Timer's Club. John joined the company in 1926 and has seen the laboratory grow from an original lone wooden building to the expanded and improved installations, still being erected under his guidance . . . . **LINN BRADLEY,** well known in the industry as a consultant and for his work in multiple bleaching and the sodium base recovery system, died Oct. 31 at Montclair, N. J.

R. M. RADSCH, vice pres. of Appleton Machine Co., recently spent a week on the Pacific Coast, calling on various mills with **CURT KOERNER,** western representative for the company.

JOHN W. ANDERSON, recently named acting men's personnel supervisor of CZ Camas mill, has been promoted to men's personnel supervisor . . . Promotions at CZ's Cathlamet operations—**LEE I. WRIGHT** to resident safety supervisor and **ALVIN E. ROBBINS JR.** to resident personnel supervisor . . . **WILLIAM HART,** director of organization and management development, Crown Z San Francisco, took two-week tour of Atlantic and European air bases as industry member of Air Training Command Advisory Board. . .

A new member of the staff for **HUGH NICKLE,** Combustion Engineering's veteran Pacific Coast manager, at Seattle, is **JAMES H. DRENNING,** who came from California . . .

Southern Sidelights

CHARLES "CHUCK" TOWEY, who attended the University of Chicago and University of Washington, has joined the plant engineering dept., Gulf States Paper Corp. He was with Boeing, Seattle, as experimental supervisor for B-52 projects, and was chief engineer with Greenleaf Corp. . . . New member of Gulf States general engineering section is **HENRY WILLIAMS,** graduate of Alabama Polytech and former chief engineer with an Alabama railway equipment firm.

LONGVIEW FIBRE PROMOTIONS result in 5-man supervisory team totaling 123 years paper mill experience (l to r): **HAROLD A. WOMACK,** recently advanced from First Asst. Paper Mill Supt. to Paper Mill Supt., joined Longfibre in 1929 as third hand on a machine; **HENRY W. DAUTERMAN,** formerly of Thilmany Pulp & Paper Co., affiliated with Longview Fibre in 1928 and became Asst. Paper Mill Supt. in 1946—now has 42 years in the industry; **REX L. WEST,** Asst. Paper Mill Supt. since 1952, affiliated with Longfibre in 1933 in control dept., out of College of Puget Sound; **JOHN W. KLEIN** also became Asst. Paper Mill Supt. in 1952, having joined the Longview firm in 1941 as Asst. Chemist after graduating from U. of Washington; **DELOS D. WILMA,** with Longview Fibre since 1940, now joins supervisory team as Asst. Paper Mill Supt. following six years as Paper Mill Tour Foreman. He graduated from U. of Washington in 1940 and went to work in control dept. The promotions are a result of earlier promotion of W. W. Clarke to General Supt. of Pulp and Paper Mfg.

Promoted at Covington, Va.

WILLIAM J. VERROSS, left, pulp mill staff engineer at West Virginia Pulp & Paper's Covington, Va., mill has been named asst. pulp mill supt. He has been with company since 1947, has spent a lot of time in experimental work. WENDELL B. HAMMOND, right, has been named supervisor of digesters and semi-chemical units. He came to Westvaco in 1955 after graduating from Ohio State U. in chemical engineering.

Three appointments in the research and development department have been announced by **DAVID C. LEA,** research and development manager, Forest Products Division, Olin Mathieson Chemical Corp., West Monroe, La.

PAUL L. GILMONT, formerly head of the research division, pulp and paper section, of the Crossett Co., has been named supervisor of pulp and paper research. Mr. Gilmont, who holds BS and PhD degrees in chemistry from Massachusetts Institute of Technology, also served as research chemist for Rayonier, Inc., Shelton, Wash. . . .

RUSSELL F. JAGODITSH, who comes to Olin Mathieson after four years as chief chemist with Chase Bag Co., Chagrin Falls, O., has been appointed group leader for coating. He also had six years service with International Paper Co., headed research and development, its Bagpak division, at Camden, Ark. He spent three years as a technical assistant at the Institute of Paper Chemistry in Appleton. . . .

CRAIG C. CAMPBELL, former production manager of Wynnewood Products Co., Jacksonville, Tex., was named group leader for waste utilization. A forestry graduate of Duke University, he was with Chance-Vought Aircraft, Dallas, as materials engineer and was wood technologist for Timber Engineering Co., Washington, D. C. . . .

Thirty seven employes who completed 25 to 30 years continuous service were presented with engraved gold wrist watches recently by **F. D. GOTTWALD,** president of the Albemarle Paper Manufacturing Co., Richmond, Va. Two women

PULP & PAPER

STRICTLY PERSONAL

BECOME ASSOCIATE MEMBERS—These five members of the staff of H. E. Bovay, Jr., Consulting Engineers, which directed the building of the Kirby Lumber Corp. mill at Silsbee, Tex., which makes chips for East Texas Pulp, have been named associate members of the firm. They are, left to right, S. J. BELL, R. O. GRIMES, J. R. MAXWELL, GUY FURGIUELE and S. L. NEWMAN.

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Chlorantine® Fast Blue 2GL
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Here are two greenish blues that combine excellent fastness to light and water, good affinity for bleached paper-making fibers and good economy in light shades. Particularly effective in unsized stocks, these CIBA Dyes are your answer to many of the pastel blues you seek for toweling, napkins, facial and toilet papers.

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Here is the most brilliant direct blue of its class... particularly useful for bright green-blues and pastel greens, and with satisfactory affinity for cellulose and generally good retention at the recommended pHs of 4.8-5.5.

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received the award, **MISS M. BEATRICE POTTER** and **MRS. LAURA S. BREEDEN**, office secretary and switchboard operator respectively. In addition awards went to Vice Pres. **CHARLES H. ROBERTSON**, Supt. **JAMES B. COMBS**, Cashier **THOMAS E. REDFORD**, Asst. Supt. **STEPHEN M. CARLTON**, Foremen **ESSEX T. RICE, ROBERT C. SMITH, JOHN V. KING, GEORGE E. WINGO, L. R. WILHELM, RUSSELL M. BERGER, JOHN W. CHAMBERS, JOSEPH P. GRAHAM, GEORGE E. WYATT** and **LAWRENCE E. CLARK** and employes **JOHN KENNEY, JOHN TIBBS, ELIJAH A. LIVELY, THOMAS P. MORRIS, JOHN BURNETT, EMMETT CRYER, LUTHER F. THURSTON, REGINALD A. LIGON, EMMETT ALFORD, CHARLEY W. JONES, ROBERT C. INGE, RICHARD A. HANSON, ALFORD JOHNSON, BENNIE TAYLOR, LUTHER C. NICHOLS, WILLIAM MEADE, LEONARD H. PRYOR** and **ABRAHAM COLTER** and Salesmen **GEORGE R. MATTSON, MORRISON T. MOOSE** and **RICHARD W. BANKS.**

Similar awards went to 14 employes of the company's Pulp and Paper Mill division in Roanoke Rapids, N. C., The Halifax Paper Co., Inc. Executive Vice Pres. and Division Mgr. **KIRKWOOD F. ADAMS** was among recipients and presented awards to **JOHN POTELLO, WILLIAM R. WHITBY, WILLIAM T. JOHNSON, RAYMOND ALSTON, HENRY FIKES, CARL T. KEETER, THOMAS E. CLARY, WALTER L. MERRITT, HENRY TOWN, GRANVILLE JONES, SWANSON BREWER, GEORGE C. REDFORD** and **BRUCE F. ROOK.**

JACK WHITENER, a graduate of North Carolina State College, will cover Southeast for Hank Jones Co. He'll operate out of Asheville, N.C. . . . **ALBANY FELT CO.** is giving $600 a year scholarships to 13 worthy students, encouraging them to study textile manufacturing, engineering, chemistry and physics. . . . **ROBERT E. MOORE,** Univ. of Illinois graduate, has joined Rawson & Co. of Houston, Tex., as sales engineer.

S. W. BATEMAN, area supervisor and **N. H. SEIRSDALE,** works mgr. of CZ's Gaylord Bogalusa mill, are due congratulations. Mr. Bateman recently celebrated his 30th year with Gaylord, Mr. Seirsdale, his 25th. . . . **M. L. BELTON,** supt. of Gaylord container plant, has been promoted to general supt. of Gaylord's container and converting plants. **FRANK BARTH,** asst. supt., takes his place as container plant supt.

Noted at random: **ADOLPH BEDNARZ,** formerly with Miamisburg Box Board Div. of Interstate Folding Box Co., is now gen. supt. at Fleming & Sons, Inc., Dallas. . . . **EVERETT J. HARRIMAN,** graduate of University of Maine, has joined Union Bag-Camp as a chem-

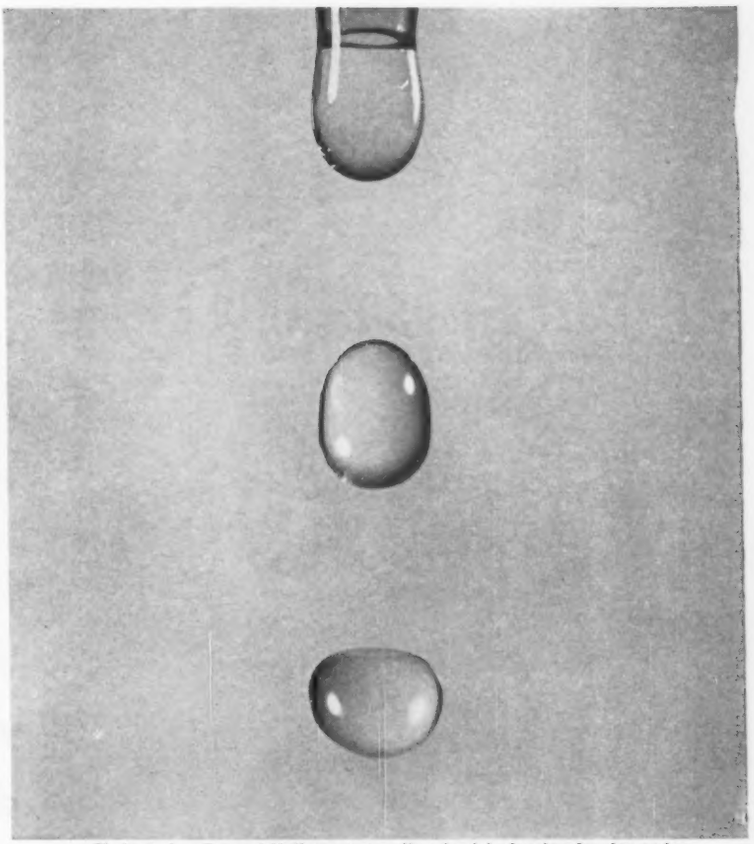
ical engineer. . . . **FREDERICK E. KNEIP,** manager of Union Bag-Camp at Trenton, N.J., now in Lakeland, Fla. . . . **ERNIE MANDERS,** formerly at Coosa River Newsprint Co., in Alabama, has been transferred to Celulosa de Chihuahua, S.A., Mexico, as prod. supt. . . . **RUDOLPH C. RICHTER,** formerly with Impco, is now head of the Dept. of Pulp and Paper Technology at the University of Alabama. . . . **HORACE T. SCORDAS** is supt. of Union Bag-Camp's Lakeland, Fla., box plant. . . . **CLIFFORD W. SMITH** has joined the staff at Rome Kraft. He was formerly at Crossett Paper Mills.

Viewed in Dixie: Our candidate for luckiest man in the industry this month: **P.L. McCALL,** Corrugating Division supt. at Sonoco Products, who got his picture snapped getting a warm smile and reception from America's prettiest Miss—Miss America, **MARIAN McKNIGHT,** also a South Carolina product. . . . **HENRI M. ALDRIDGE,** prominent Mobile, Ala., barrister and former member of one of the city's leading legal firms, has joined International Paper Co. Southern Kraft Div. staff as counsel of the division and general supervisor of its legal affairs. . . .

Union Bag-Camp helps to keep southern highways pretty by distributing white "litter bags" to major gas distributing dealers in the Savannah area. Bag has a picture of "Pickup Pelican" and a message inviting motorists to use the bags. Union Bag-Camp's oft-quoted, oft-seen public relations director **KIRK SUTLIVE** was recently honored with the Catholic Medal Pro Ecclesia at Pontifice from Pope Pius XII for directing a religious fund drive which went a quarter-million dollars over its million dollar goal.

GEORGE C. MORGAN is now vice pres. in charge of the industrial div. of Continental Gin Co. His division doesn't have a single "salesman" but is active developing equipment for pulp and paper. He has been mgr. of the division since Feb. 1955. . . . **JOSEPH S. GOWDY** is new dist. rep. in Texas and Oklahoma for Heppenstall Co.

Congratulations to Champion Paper & Fibre's monthly employe magazine, "The Log," which won first place in an editorial contest sponsored by Industrial Sports and Recreation Magazine. . . . Champion should be giving the U.S. mail fits. A letter from Switzerland recently was addressed to "Champion Paper & Fibre Co., Hamilton, Ohio, Texas, U.S.A." Fame of the "Giant" state played second, however. The letter was delivered to the Hamilton general offices in seven days. And if that's not enough, all of the residents on Imber Street in Pasadena, Tex. (a short street), are members of the Champion staff. There are eight—and six of them have the same name, Allen. No relations.



Photographer Bernard Hoffman uses a tiny droplet of water, forming and falling, to illustrate time sequence.

Controlling Time in Fluid Engineering

Even in simple hydrodynamic situations like the one pictured above, time sequence is measured in micro-seconds. More often than not, other factors—such as pressure, volume and flow—all tend to complicate fluid time control. That's where the engineering leadership of S. Morgan Smith can help you most.

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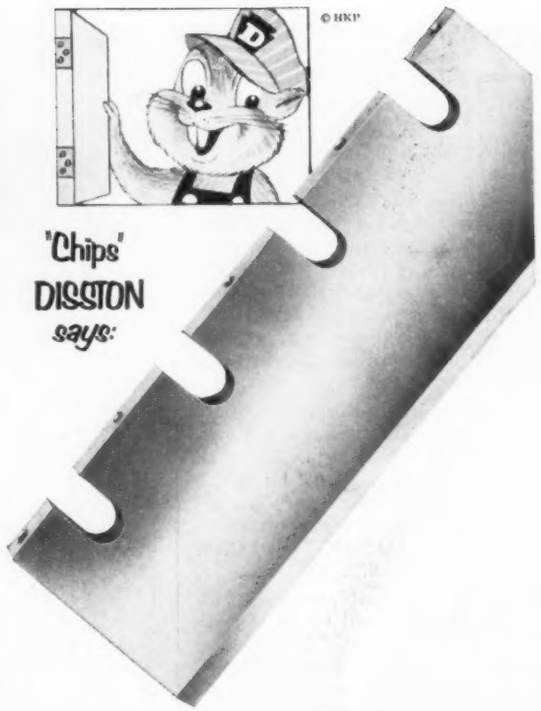

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HKP Henry DISSTON DIVISION
H. K. PORTER COMPANY, INC.

STRICTLY PERSONAL

Midwest Medley

It was back in 1927 that **J. RICHTER SALVESON,** on a study fellowship from Bergen, Norway, first set foot at Marathon Corp.'s operations in Rothschild, Wis. He liked it, and has been there ever since. His first assignment was working with the late **GUY C. HOWARD,** one of the pioneers of this industry in finding uses for sulfite waste liquor, installing the by-products processes at Rothschild. Now Mr. Salveson is director of research for Marathon. He is an ardent curling sportsman. He married the former Gunvor Eberhardt of Norway and they have two sons. . . .

ROBERT B. MAUCKER has been promoted to mill manager of Alton Box Board Co., announces **MARVIN W. SWAIM,** first vice president and gen. mgr. Mr. Maucker had been administrative assistant to Mr. Swaim, a position filled by **HARRY S. ADLER,** recently retired secretary of NPA. . . . **DELBERT J. DEAN** became Alton's director of sales, with **COURTNEY E. HEINEMAN** as new mill sales manager. The latter had been with **TOM PARRY** in the St. Louis public relations firm, Thomas W. Parry and Associates. . . .

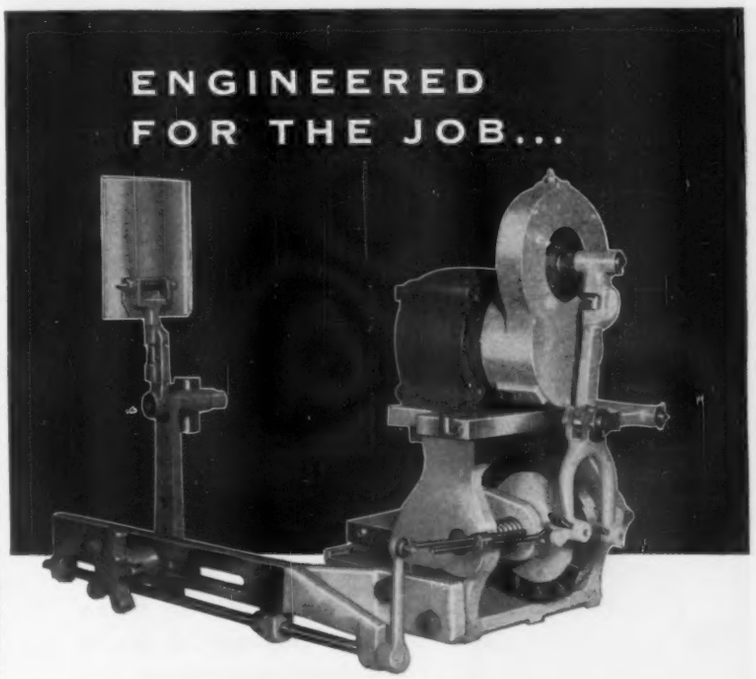
Way back in 1901, 15-year old **JOE BECHER** was strolling on the power canal at Appleton Woolen Mills in Appleton, Wis., when he rushed to aid two men trying to keep ice out of the plant's power flume. This good turn landed him a job and he is still going strong weaving felts for paper mills, 55 years later, with no idea of retiring.

Re-elected recently as officers of the Institute of Paper Chemistry's board are **ERNST MAHLER,** chairman; **W. IRVING OSBORNE JR.,** vice chairman; **JOHN G. STRANGE,** president and treasurer, and **HARRY F. LEWIS,** vice president. . . . **C. B. SITTERSON JR.,** has resigned as secretary of the Institute. His successor is **WENDALL H. SMITH,** who had been with the FBI and was a lieutenant in the Navy in World War II and Korean action prior to coming to the Institute in 1955 as an administrative coordinator. . . .

From Chicago where he was traffic man for a big trucking outfit, **JAMES WOODARD** has joined Nekoosa-Edwards Paper Co. as new traffic dept. staffer. **JOE HILDEBRANDT** and **LOUIE OLSON,** power dept., **FLOYD HINKLEY,** telephone engineer for the power dept., and **CHARLES HERRICK,** maintenance, are recent retirees at Nekoosa-Edwards. . . . . . **ELI DEPREZ,** who joined the ranks of Kimberly-Clark's Life Members club after 42 years service, told how "sawdust" paper was made in early days. "We put colored sawdust on wall-paper and ran it through the rolls to give a sawdust wallpaper," he said. Mr. DePrez spent 27 years as a beater engineer in the creped wadding section. . . .

FRANK R. SOOS, promoted to asst. plant supt., Elkhart, Ind., folding carton plant of Robt. Gair Division of Continental Can, will be in charge of night operations. He has been with Gair for 25 years, starting as a packer. . . . **WILLIAM H. AIKEN** has been promoted to director of research and development at Gardner Board & Carton Co. He's a native of Texas, with a doctorate from the Institute of Paper Chemistry. He came to Gardner in 1952 as tech. director from Goodyear Chemicals Division. . . . Recently joining Ohio Boxboard as mechanical development engineer is **CARL REISER,** from Kocher Processes, Pittsburgh. Before that he was with Westinghouse. . . .

GEORGE G. GIBB is new director of industrial relations for M & O Paper Co., Minneapolis. He was manager of employe and community relations at the International Falls mill. He succeeds **GEORGE N. WILLIAMS,** who resigned to join Alden Elstrom Associates, consulting firm. Mr. Gibb came to M & O from Spruce Falls, Ont., where he was personnel manager for 8 years up to a



**Model 405 wire guide—
like all Gilbert and Nash guides*—
is engineered for the job!**

Dependability is a built-in characteristic of Model 405 . . . increasing or reduction gear, speeds from 50 to 1200 f.p.m., anti-friction bearings, feather-touch palm. Low initial cost, low maintenance costs make Model 405 an economical installation, too.

Discuss *your* guiding requirements with a technically-trained Gilbert and Nash representative.

GILBERT and NASH company

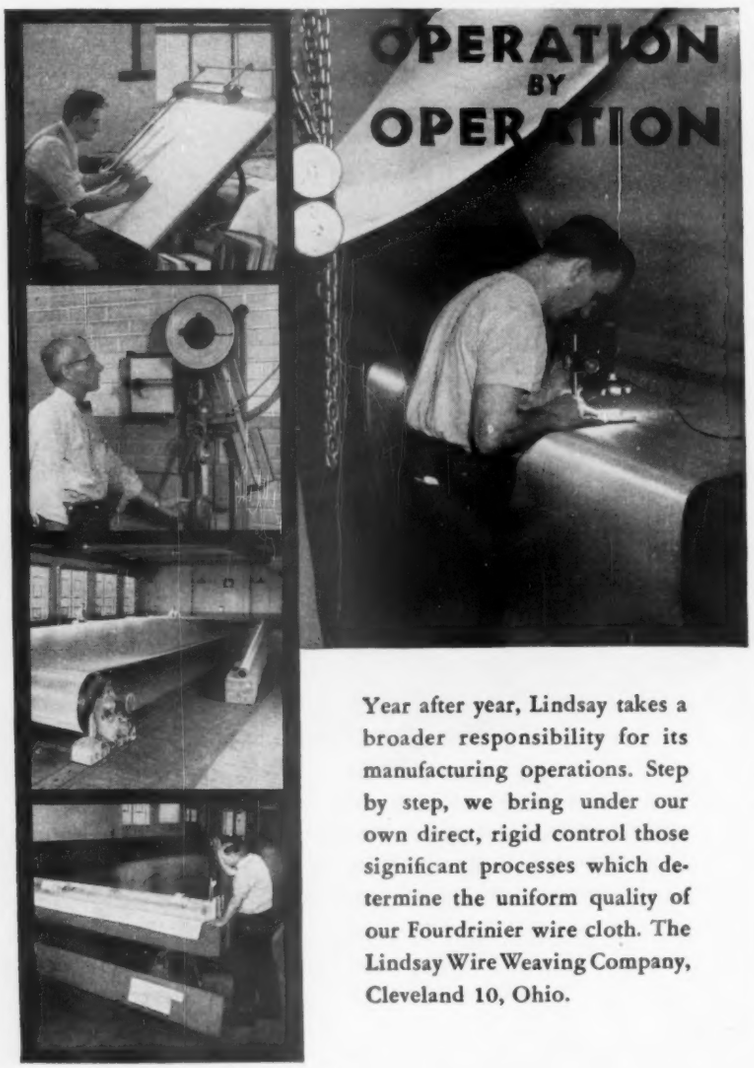
*Manufactured and sold exclusively by The Appleton Machine Company

STRICTLY PERSONAL

year ago. . . . **ROBERT N. DOUGLAS** succeeded him at the Falls. . . .

L. R. STEINBACH, general traffic mgr., The Mead Corp., has been appointed to the traffic committee of Nat. Paperboard Assn. . . .

P. D. APPLEGATE, Hercules Powder Co., Kalamazoo, was named to chairman the Jan. 24 Joint Supts.-TAPPI meeting in Kalamazoo, where **HARRY F. LEWIS** of the Institute was the scheduled featured speaker, on his favorite topic—student manpower procurement for this industry. . . . **AL NADELMAN** was a busy man making plans for the dedication the next day in Kalamazoo of his department of paper technology's new building. This little paper school, started under Dr. Nadelman's direction, is getting bigger and bigger every year. . . .



Year after year, Lindsay takes a broader responsibility for its manufacturing operations. Step by step, we bring under our own direct, rigid control those significant processes which determine the uniform quality of our Fourdrinier wire cloth. The Lindsay Wire Weaving Company, Cleveland 10, Ohio.

LINDSAY WIRES Since 1904

FOR PAPER MANUFACTURING

Program Committee for Coating Conference

A nine-man program committee is planning the 8th annual Tappi Coating Conference in Milwaukee's Hotel Pfister May 20-23: **W. H. AIKEN,** Gardner Board and Carton Co.; **R. W. HAGEMEYER,** Wyandotte Chemicals Corp.; **H. KOHNE,** West Virginia Pulp and Paper Co.; **R. W. MARTINEK,** Kimberly-Clark Corp.; **G. S. McKNIGHT,** Oxford Paper Co.; **A. W. NEUBAUER,** Crown Zellerbach Corp.; **E. R. PADAVIC,** Container Corp of America; **C. W. STEELE,** Champion Paper & Fibre Co., and **W. E. WELLIVER, JR.,** New York & Pennsylvania Co.

Northeast Notes

CONRAD KERN, an outstanding engineer active in design of pulp and paper machinery, died at the age of 82. His long-time association (62 years) with the Moore & White Co. was climaxed by 17 years of presidency of that company. After his retirement, he served as consultant to M&W for 5 years.

O. F. HUTCHINSON, recently director of sales, Sveen Pedersen Sales Corp., has joined the technical service staff of Peter Cooper Corp., with headquarters at Gowanda, N. Y. He entered the paper industry with the Brown Co. in 1930 in research and development, later was chief chemist for Merrimac Paper, and since 1937 has been engaged in sales-service-engineering capacities with Bulkley Dunton Processes, Inc., and Sveen Pedersen Sales Corp.

L. A. MOSS, formerly with Whiting-Plover Paper Co. for 18 years, has joined Riegel Paper Corp. as administrative assistant to the vice president-manager of the New Jersey division. He's a grad of North Carolina State College and Institute of Paper Chemistry. . . . **JOHN H. RICH,** assistant Milford mill manager, steps into new post of manager of converting and coating depts. **LAWRENCE N. AGNEW,** acting mill supt., moves up to post of superintendent of the Milford Mill dept. . . . **DWIGHT E. WHEELER,** manager of industrial engineering, takes on additional duties of service director. . . . **ERNEST E. HARPER,** senior industrial engineer, moves into new job of maintenance planning manager. . . . **C. FREDERICK BIDEWELL,** senior boss machine tender, steps up to night supt. and **PETER W. PURSELL** moves from boss machine tender of No. 12 machine to boss machine tender of Nos. 5, 6, and 14.

WALTER E. SPEARIN has rejoined D. M. Bare Paper Co. as production supt. He has a b.s. in chem. engineering from the U. of Maine, an m.s. from Institute of Paper Chemistry. . . . **LAWRENCE B. HAWES, JR.** is now regional engineer in charge of Scott Paper Co.'s new east-

Promotions at Brown

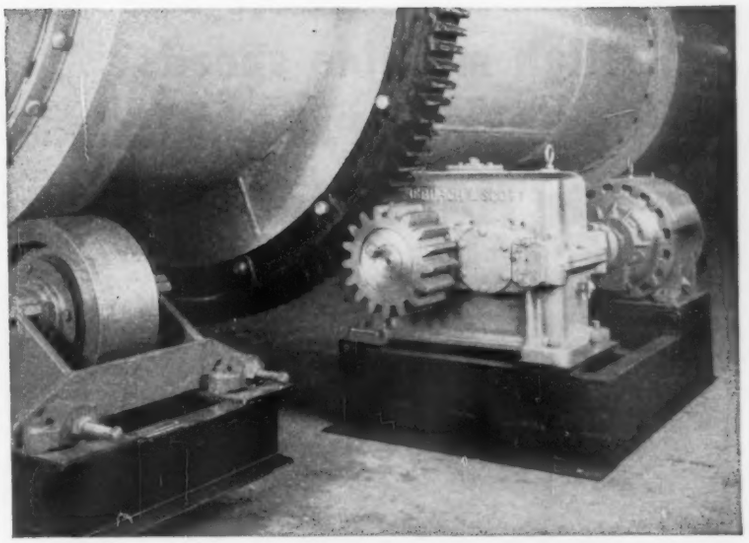
ADRIAN CROTEAU (left) is new superintendent, kraft pulp mill, Brown Co., Berlin, N.H. He joined Brown in 1925, worked his way up in pulp operations. NAZAIRE METIVIER (right) takes over as assistant supt. He joined Brown in 1918, has spent most of his time in pulp operations moving from sulfite to kraft operations in 1949 as digester cook. He became tour foreman at the kraft mill in 1949.

ern engineering region (includes mills in Winslow and Madison, Me.; Fort Edward and South Glens Falls, N.Y.; Hoboken, N.J., and Chester, Pa.) . . . New changes in Scott's chemical research division are: **DONALD B. SPARROW,** from pulp research manager to manager of newly-created pioneering research section; **HENRY W. STEINMAN,** research associate in protective packaging to pioneering research; **SYDNEY COPPICK,** from pulp research associate to pulp research manager and **AUGUST S. ERSPAMER,** from paper mill supt. at Winslow to manager of specialty papers.

MR. AND MRS. GEORGE WALLACE (he's president of Fitchburg Paper Co.) recently returned from a 20,000 mile trip along the length of the African continent. They took special care to avoid trouble-spots and "shot" some big game with his new automatic movie camera. . . .

JOHN A. SUSHEREBA has been named junior engineer in the engineering dept. at Hammermill Paper Co., reports **KURT NEUENFELDT,** chief engineer. . . . **CARL GREENBAUM,** vice president, Hudson Pulp & Paper Corp., has resigned after 35 years. Future plans have not yet been announced, he told **PULP & PAPER.** . . . **CHARLES K. BARTON** has been named manager, genuine pressboard sales for Case Bros., Inc., Manchester, Conn. . . .

KENNETH H. LILLIS is now packaging engineer for Robert Gair Div., Continental Can Co., Inc. He was previously packaging engineer for Western Electric at Kearny, N.J. and Allcraft Container Corp. . . . **ARTHUR J. BEILEIN** has been named superintendent of finishing operation at Gair's Tonawanda boxboard mill. **JAMES O. ELMORE** succeeds him as personnel manager at the mill. . . . **GEORGE E. PROKUPEK** is now assistant to **WILLIAM H. CADDOO,** vice president in charge of boxboard operations. **EVERETT RAYMOND** replaces

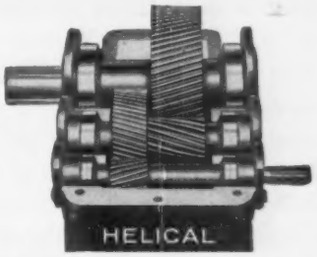


H&S speed reducer delivers 10 maintenance-free years of continuous service

Manufactured by the Louisville Drying Machinery Unit of the General American Transportation Corp., this Barite Dryer was installed in 1945. The H&S Size 2400 Speed Reducer and H&S Drive Pinion and Gears that you see above have given over 10 maintenance-free years of continuous moderate-shock service.

H&S Herringbone, Helical and Worm Gear Speed Reducers have been serving heavy industry for 26 years. If you are looking for dependable, trouble-free power transmission, won't you contact your H&S representative or write us today?

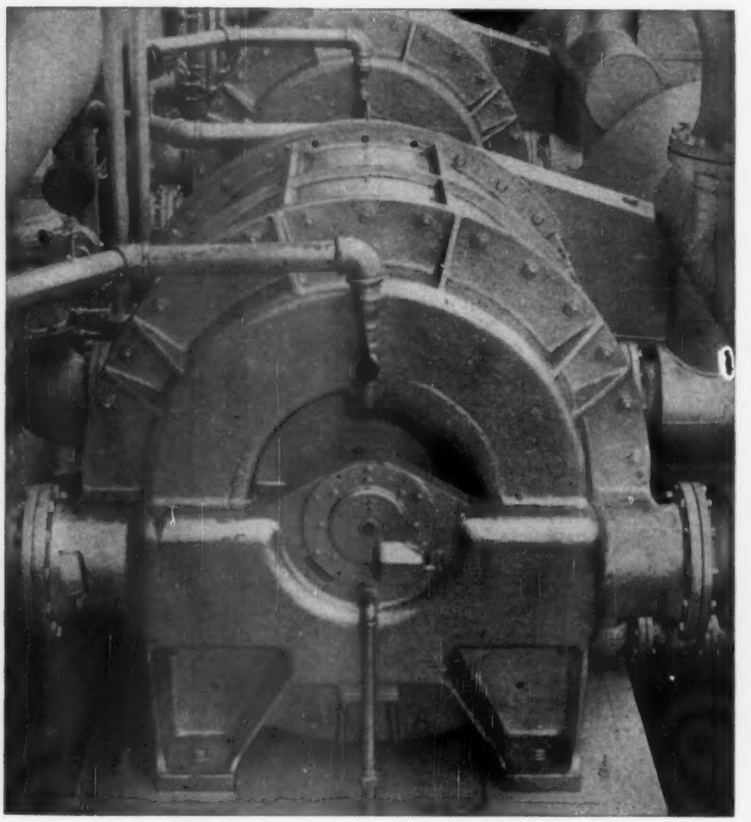
H&S Reducers are available in single reduction units in ratios up to 100 to 1; in combination units up to 700 to 1; and in double reduction units up to 10,000 to 1.



H&S Gears: There are 9 types for you to choose from! Spur Gears are cut up to 144" diameter and 1 D.P. Write today on company letterhead for the new H&S Gear Catalog No. 57.

THE HORSBURGH & SCOTT CO.
GEARS AND SPEED REDUCERS
5112 Hamilton Avenue
Cleveland 14, Ohio

High machine speeds?
High temperature headbox stock?
You need NASH Vacuum Pumps!



Air from the suction rolls on paper machines carries with it substantial quantities of moisture. This considerably reduces the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump, because of the unique principle of operation, the bulk of this vapor is effectively condensed inside the pump. The total capacity of a Nash is therefore increased.

When you specify a Nash Pump it can be closely sized to the job. It is not necessary to select an over-sized unit, because the rated capacity of the Nash may be relied upon.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

441 WILSON ROAD, SO. NORWALK, CONN.

PULP & PAPER STRICTLY PERSONAL

him as assistant supt.

ROGER SMITH, retired chairman of the board and former president of S. D. Warren Co., died in December. He initiated with Warren the concept of merchandising a standard line of printing papers through established distributor channels on a national basis.

Column from Canada

ROY W. EMERY, development pulp consultant for Allied Paper Mills, has returned to his office in Toronto from a tour of Swedish and Italian paper mills. **W. A. KIRKPATRICK,** vice president and director of development of Allied, and **HAL FIELD,** in charge of the company's timber research, made the trip, too. They included visits to the Svenska Cellulosa mill at Sundsvall, the Stora Kopperberg mill as Skutskar, Sweden, and a new Saffa mill at Magnata, Italy. . . .

JOHN BLAKEMAN has succeeded **GARNET EASTWIID** as instrument engineer at Spruce Falls Power & Paper Co., Kapuskasing, Ont. . . . **F. W. BRADSHAW,** McGill graduate who joined Consolidated Paper Corp. in 1934 and served in various capacities until becoming manager of manufacturing, has now been named executive assistant to **G. M. HOBART,** president, in Montreal. . . . **PETER WRIST** has joined the research department of the Mead Corp. at Chillicotthe, Ohio, after several years with Quebec North Shore Co. at Baie Comeau, Que., where he was in the research department. . . . **THOMAS AITKEN,** for-

Powell River Appointments

EVAN PIRIE (left) has been promoted to Finishing Room Supt. at Powell River Co.'s newsprint mill in British Columbia on the retirement of DAVID McBAIN. He started his papermaking career 26 years ago as a grinderman. LEONARD MURPHY (middle) has been named Project Engineer for No. 16 boiler. He joined the Engineering Dept. after graduation from U. of British Columbia five years ago. DR. HERMANN F. CROTOGINO (right) has joined the Research Dept. at Powell River. He attended U. of Graz in Austria and Breslaw in Germany, where he obtained his doctorate in physical chemistry. Before joining Powell River Co. he was with Alaska Pine & Cellulose at Port Alice, B.C.

merly with Abitibi Power & Paper Co., has joined West Virginia Pulp & Paper Co. at Covington, Va., as a chemical engineer.

V. T. KANE, Canadian International Paper Co.'s personnel supt. at Kipawa, had been transferred to the company's Gatineau mill in Quebec. **CAMERON SMITH** replaced him at Kipawa. . . . **F. J. FARRELL,** woodlands manager New Brunswick International Paper Co. at Dalhousie, N. S., has been named port superintendent there.

PAUL E. COOPER, former president of Pacific Mills, subsidiary of Crown Zellerbach Canada at Vancouver, is almost as busy in "retirement" as he was when on full-time duty. In South America he will make a survey of pulp mill possibilities for an unidentified group, and when this is over will make a world tour in the interests of another industry organization. . . .

D. B. FOSS has been named assistant manager of manufacturing in the Laurentide division of Consolidated Paper Corp., with headquarters at Grand'Mere, Que., where he was formerly division manager. . . . **E. T. BUCHANAN,** chief engineer, has succeeded him as division manager, and **C. M. WILLIAMS,** assistant to the chief engineer, has become chief engineer. . . . Another Laurentide man, **VIGGO JEPSEN,** has been named assistant chief engineer. . . .

CUSTOM FABRICATING DATA—*Request New Brochure P-56*

This information on plant facilities and services will be of value to purchasing, procurement and engineering personnel when planning the custom fabrication of...

CORROSION RESISTING VESSELS

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Send blueprints for quotation on your next job

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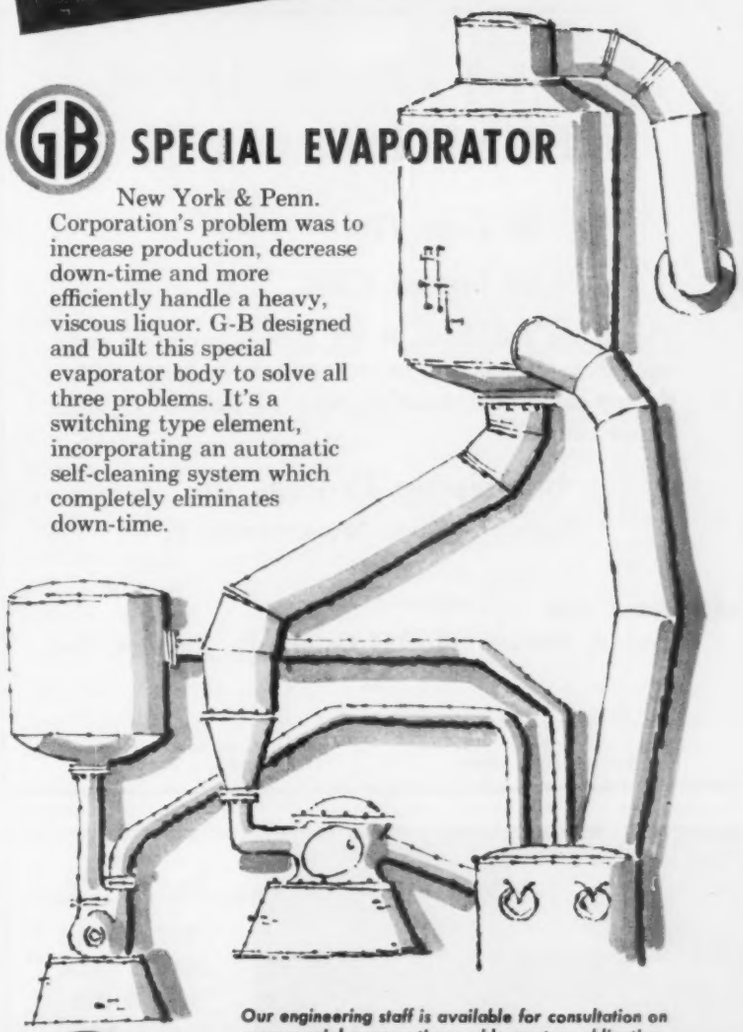
3670 EA. MARGINAL WAY—SEATTLE 4, WASH.

Craftsmen in steel plate and alloys up to 1"

Something Special...

may solve YOUR problem!



GB SPECIAL EVAPORATOR

New York & Penn. Corporation's problem was to increase production, decrease down-time and more efficiently handle a heavy, viscous liquor. G-B designed and built this special evaporator body to solve all three problems. It's a switching type element, incorporating an automatic self-cleaning system which completely eliminates down-time.

Our engineering staff is available for consultation on your special evaporation problems at no obligation.

GB GOSLIN-BIRMINGHAM MANUFACTURING CO., INC.
BIRMINGHAM • ALABAMA

PULP & PAPER Chemicals Column

"The pulp and paper industry is a cellulose clothesline on which many chemicals are hung"

MORE SODIUM CHLORATE . . . Oldbury Division, Hooker Electrochemical Co., is expanding its plant near Columbus, Miss., to produce additional sodium chlorate. Bjarne Klaussen, president of Hooker, says the enlarged plant will be completed in early 1958 and will bring the total investment value there to approximately $6 million.

ROSIN SIZING IS A NEW BOOKLET presented by the paper chemicals department of American Cyanamid Co. Features: The relationship of size test values to size concentration and two-sidedness; the use of variance analysis for rosin sizing test data and the relation of size test precision to size concentration and two-sidedness.

Greater Production of Higher Quality Pulp

- *in Less Time*
- *at Lower Cost*

This is the end result of the various processes and equipment which we have installed in pulp mills throughout North America. Send us details of your requirements.

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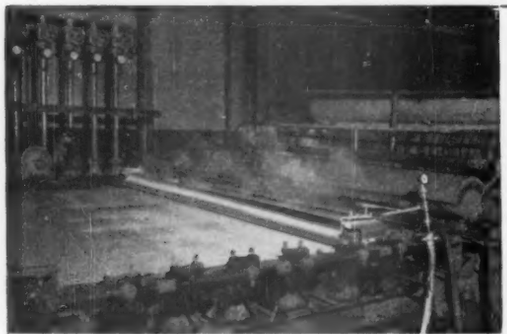

Increase Paper Production with DUPASQUIER DRIPLESS STEAM SHOWER BOX

- Preheats the Web
  U. S. patent 264 2314
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  THUS FREEING WET MAT
- Allowing Speed Increase

Custom Built for Any Machine
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HOW TO USE CAUSTIC SODA SAFELY. Personal protective equipment and first aid treatment are detailed on a Caustic Soda Handling Chart, being offered to caustic users by Westvaco Chlor-Alkali Division of Food Machinery and Chemical Corp. Chart size is 20 in. by 16 in., made for wall-hanging, printed in three colors. Just ask for your copy on company letterhead from Westvaco at 161 East 42 St., New York 17, N.Y.

CONSTRUCTION OF A NEW POLYOL PRODUCTION UNIT at its Chemcel plant in Bishop, Texas, has been announced by Celanese Corp. of America because of growing demand for trimethylolpropane in polyurethane plastics and coatings. Production start-up: Late 1957.

PRICE CUT FOR CYANURIC CHLORIDE of 15¢ a lb. has been announced by American Cyanamid Co. This is a chemical intermediate used chiefly to produce optical brighteners in papers.

SEPARAN 2610 IN PULP AND PAPER is featured by The Dow Chemical Co. in a new booklet. Features: effective as flocculant in filler retention, savealls, process water, white and green liquor settling and filtration, bleach liquor settling and waste effluents. (Incidentally, one mill visited by PULP & PAPER reports using Separan 2610 in its savealls with very favorable results.)

MORE STYRENE-BUTADIENE. A new plant for commercial production of styrene-butadiene latices is now in operation at the Western division of The Dow Chemical Co., in Pittsburg, Calif.

NEW SPRAY-DRIED CLAY . . . A new grade of spray-dried coating clay for use in the paper industry is announced by the Industrial Products Department, J. M. Huber Corp. Known as Hydrafine, the new clay has excellent covering power and imparts high gloss and brightness to all grades of paper and folding boxboard. It is particularly effective with the off-colored folding grades of boxboard, says Huber. The addition of Hydrafine gives Huber a coating and filler clay for virtually every phase of papermaking. Use of coated boxboard is expanding rapidly. Within five years, it is expected that 75% of the folding grades will be coated, compared to 10-15% that is coated today. Samples of Hydrafine clay are available on request from J. M. Huber Corp., 100 Park Ave., New York 17, N.Y.

NEW ERA WHEN PAPER SHORTAGES END

"In 1956, 37,600,000 tons of paper in all forms will have been consumed, amounting to 427 lbs. per capita. By 1959 this production figure will rise to 177,000,000 tons. In late 1958 or early 1959 there will be a surplus in all grades and a new selling era in the paper industry. The surplus will create a new demand for uses of paper."—**CHARLES F. CHAPLIN,** general mgr., Allied Paper Mills.

3 REASONS FOR GROWTH

"Reasons for the sensational growth in the use of paper in this country, besides a rapidly increasing population, are threefold: (1) Development of sanitary—throw-away—papers used both in homes and industry; (2) expansion of the supermarket and the increasing demand for one-stop shopping where the package is the salesman; and (3) designed packaging from the manufacturer to the consumer—from the shipping container to the individual packaged article for sale."—**FOLKE BECKER,** chairman of board, Rhinelander Paper Co.

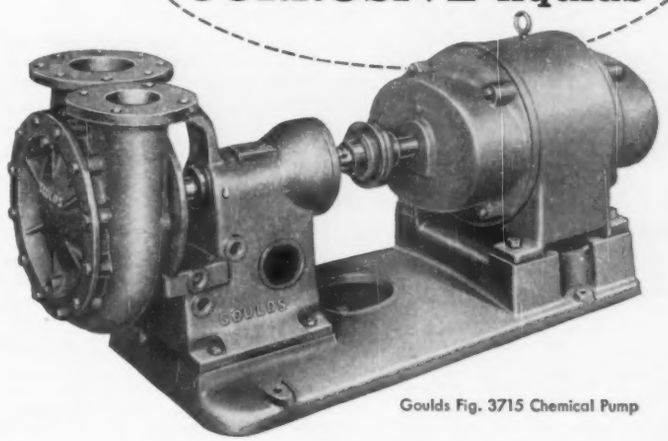
"OUR GREATEST DANGER"

"The greatest danger to our people lies in the encroachment of government with a capital "G" into our business, our homes and our lives. The crushing weight of unfair and discriminatory taxes and of union coercion and violence are terrible evils, but worse is the enervation of a people who have given in to the blandishments of what Herbert Hoover has called 'legalistic socialism, the veiled sister of communism'."—**COLA G. PARKER,** president of National Assn. of Mfrs., former president and chairman of Kimberly-Clark Corp.

MANAGEMENT'S RESPONSIBILITY

"Management today accepts the primary responsibility for accident prevention. This responsibility should not, and in fact cannot, be delegated, and top management must give active support to, and show personal interest in the challenge of accident prevention." . . . **R. J. ASKIN,** vice president, Abitibi Power & Paper Co.

Here's a pump especially designed for your ABRASIVE and CORROSIVE liquids



Goulds Fig. 3715 Chemical Pump

You minimize your "hot" pumping problems — and expenses — with Goulds chemical pumps because *they're built to take it!*

With the Fig. 3715 pump, you can handle liquids that would "murder" most pumps. Such liquids as acid, alkaline liquor, hot size, and slurry. But this pump offers more than just severe service design. You get fewer maintenance problems plus special operating advantages.

For example

Look at the support head—its rugged, box-type design with water jacket permits you to pump liquids as hot as 350° F. Over-lubrication is prevented by grease-lubricated standard bearings with grease relief. You can adjust impeller clearance without any dismantling by means of a simple, positive external arrangement.

A variety of construction materials meets every need. Goulds Fig. 3715 pumps come in Type 316 and Gould-A-Loy 20 stainless steel, all aluminum-bronze, all iron or bronze-fitted.

More reasons why

There's a wide range of sizes, too—nine in all—with capacities up to 720 GPM and heads to 200 feet. You can keep a low spare parts inventory since many of the parts are standardized for interchangeability between sizes.

There are many more reasons why you can save money and avoid maintenance headaches by pumping those harsh liquids with a Goulds Fig. 3715 pump. Learn about them by addressing your inquiry to Goulds Pumps, Inc., Seneca Falls, New York.

ASK FOR BULLETIN 725.4.

Goulds PUMPS INC. Seneca Falls New York

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National Forest Timber for Sale

Oral auction bids will be received by the Regional Forester or his authorized representative at Room 223, 510 Second Street, N.W., Albuquerque, New Mexico, beginning at 2:00 P.M. on February 28, 1957, for 6,000,000 cords, more or less, of ponderosa pine, Douglas-fir, white fir and other species of pulpwood on about 1,578,700 acres within the Williams Block, Williams Working Circle, Kaibab National Forest; the General Springs, West Clear Creek and Willow Valley Blocks, Flagstaff Working Circle, Coconino National Forest; the Heber and show Low-Pinedale Working Circles, Sitgreaves National Forest; the Black River and Springerville Working Circles, Apache National Forest; the Payson and Pleasant Valley Working Circles, Tonto National Forest; and the Grants-Zuni Working Circle, Cibola National Forest, as shown on a sale area map on file in the office of the Regional Forester, Forest Service, Albuquerque, New Mexico. In the Grants-Zuni Working Circle pulpwood cutting will be required or permitted only upon written agreement between the Forest Service and the purchaser. In addition, there is within the sale area an estimated volume of 252,400 cords of aspen pulpwood and an unestimated volume of logging residue from sawlog operations the cutting of which will be required or permitted only upon written agreement between the Forest Service and the purchaser. No bid of less than $1.10 per cord for stumpage and required deposits will be considered. The rate bid will apply for all pulpwood scaled or released for cutting before July 1, 1966. Prior to July 1, 1966, and at each five-year interval thereafter the total rates will be redetermined, but in no event will the sum of the rates for stumpage and sale area betterment be less than $1.00 per cord and in no event will rates below those bid become effective before 1,000,000 cords have been scaled and paid for. Each bidder must submit to the Regional Forester before 2:00 P.M. on February 28, 1957, a sealed bid accompanied by $25,000.00 in acceptable form such as bank draft or certified check drawn payable to the Forest Service, USDA, to be applied on the purchase price, refunded or retained in whole or in part as liquidated damages according to the conditions of sale. Sealed bids will be opened and posted at the beginning of the auction for the information of all bidders. If an oral bid is declared to be high at the close of the auction the high bidder must immediately confirm the oral bid by submitting it in writing on a Forest Service bid form, and the high bidder must, by not later than March 14, 1957, or any written extension thereof by the Forest Service, deposit with the Forest Service negotiable securities of the United States with a face value of $75,000, or make an additional deposit of $75,000, as an additional guarantee of qualification for final award and execution of the sale contract on or before January 1, 1958, or any written extension by the Forest Service. On or before January 1, 1958, or any written extension thereof by the Forest Service, the successful bidder must furnish evidence of financial ability to carry out the timber sale contract, execute a timber sale contract and furnish a satisfactory performance bond in the sum of $100,000. The minimum requirement of adequate financial ability to carry out the timber sale contract is evidence that a fund of at least $10,000,000 will be available to draw on for plant construction. If the successful bidder provides an acceptable financial statement, executes the sale contract, and gives satisfactory performance bond by January 1, 1958, or any written extension thereof by the Forest Service, the above $75,000 additional deposit will be refunded; otherwise, the total amounts deposited will be retained as liquidated damages. The right to reject any or all bids is reserved. The contract will require that before March 1, 1962, the purchaser shall show possession of, or install a pulp mill or other wood-processing plant having a capacity sufficient to utilize at least 150,000 cords yearly from this sale area. The contract will require that the purchaser shall before March 1, 1959, submit detailed plans and specifications showing the structures and facilities to be built and the machinery and equipment to be installed, and shall before October 1, 1959, make satisfactory showing to the Forest Service that the principal items of machinery and equipment for the above described pulp mill or other wood processing plant have been placed on order with manufacturers. Forest Service bid forms for use in submitting sealed bids and full information concerning the timber, the conditions of the sale, and the submission of bids should be obtained from the Regional Forester, 510 Second Street, N.W., Albuquerque, New Mexico or from the Chief, Forest Service, Washington 25, D. C. before bids are submitted.

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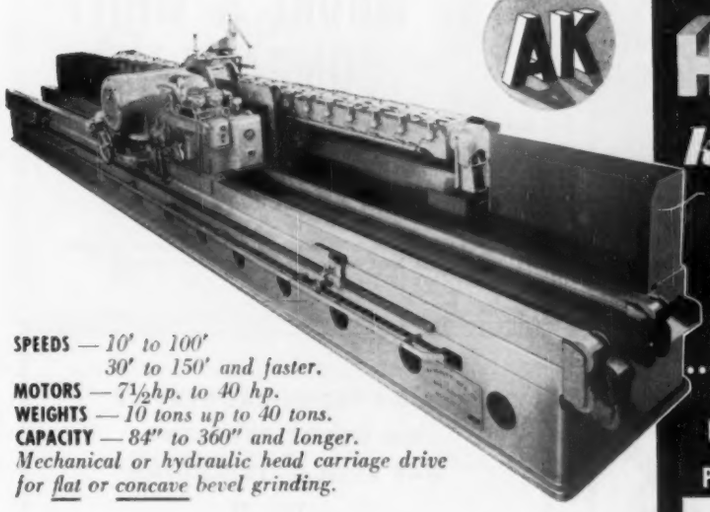

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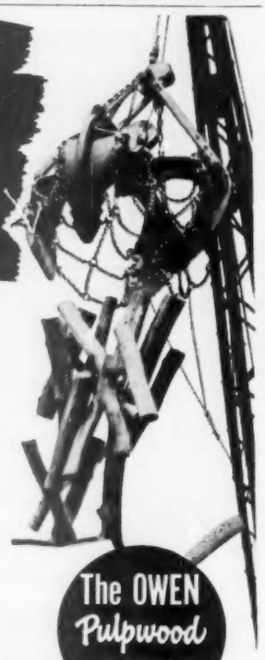

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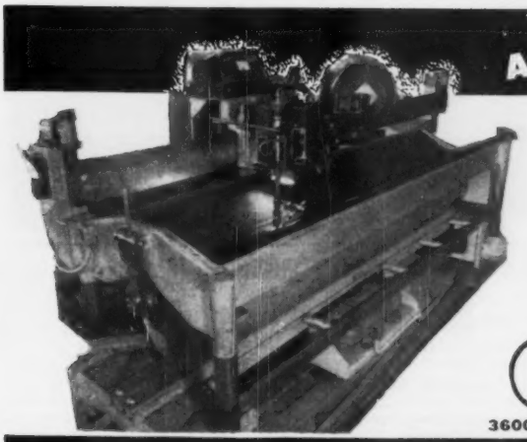

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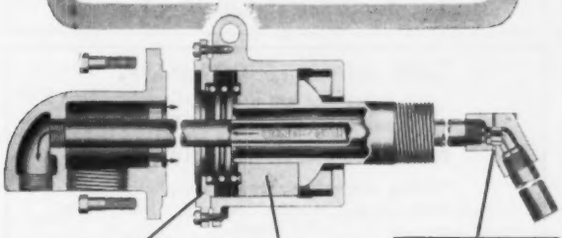

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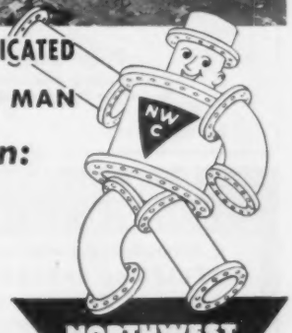

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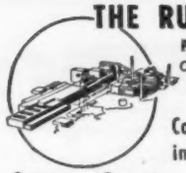
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The LAST WORD PULP & PAPER EDITORS' PAGE

Who are Real Heroes of Forest Conservation?

Thoughts along these lines came to our editors with shocking news of the untimely death of John Philip Weyerhaeuser Jr. at the age of 57.

If any individual is the unsung hero of conservation and good forestry practice in America, he should be a candidate for the honor.

For some two years he kept it a secret from his closest associates that he was dying of leukemia. He did this in order that none in his company would falter, nor miss a step, in carrying out its vast program of long term improvement and expansion.

Heroes in business? Many fiction writers may not think so, but there are some.

It was Phil Weyerhaeuser who decided to try to offset popular false conceptions about forest industries by engaging a completely impartial, irreproachable but qualified agency to make a thorough-going study of the facts. So he provided financial support for several years' study into the future of wood resources and wood needs of America by the Stanford Research Institute. All forest industries benefitted from the facts it produced.

Weyerhaeuser Timber Co. not only launched the first Tree Farms, which much of the public still thinks is a government idea, but under Phil Weyerhaeuser's presidency, set an example of genuine "working" tree farms which are a marvel of forest industry history. The public still doesn't know it, but today, with Mr. Weyerhaeuser's leadership, industries have reached a point where they can point an accusing finger at federal, state and small lot owners of forest lands and say: "It is up to you, now, to do as good a job as we are doing, cleaning up your forests and making use of your dying and rotting trees, and growth potentials."

Phil Weyerhaeuser knew the frustration and bitterness of trying to fight against appalling public ignorance of the true facts. That was because of attacks that had seemed to center upon his own grandfather and family. But while he knew the odds better than others may have, he never flinched.

Phil Weyerhaeuser probably saw clearer than any other man in forest industries, the uphill fight which industry still faces today—to show it is the real conservationist of the forests. He faced many attacks on this score, but always came back, still fighting to establish the truth. This is what he tried to overcome. . . .

The Prophets of Doom

To the American public, names like Roosevelt, Pinchot, Graves and Watts, come to mind as heroes of conservation. It was Eleanor Roosevelt who seized upon the poet's phrase, "Only God can make a tree," in an endeavor to infer that even the Deity was opposed by so-called "timber barons."

It was Gifford Pinchot, favorite of Teddy Roosevelt, who 50 years ago said "we have in store only timber enough for 20 or 30 years . . . a timber famine is inevitable." And 30 years ago he was still saying: "Our forests are being depleted. Our lumbermen are thinking of getting timber from Russia."

The man-in-the-street thinks Pinchot was a great prophet—even in the face of these facts which prove he was a mighty poor one.

And when Graves was Chief Forester in 1919, he said if World War I had come 15 years later, we would have been greatly embarrassed to obtain enough wood to fight it. Another war did come 20 years later and there was ample wood—and more wood grown after it was over. But in the last decade, former Chief Forester Watts many times spoke alarmingly of our wood resources.

Then, about the same time Stanford's Report on resources came out, a new U.S. Forest Service survey revealed that a survey 8 years earlier had been erroneous and that growth of wood actually exceeds drain in the U.S. So, Phil Weyerhaeuser lived to see his knowledge of this country's forest strength vindicated.

But what about the man-in-the-street? He still believes the old bedtime stories. Some one has got to take up the battle where Phil Weyerhaeuser left off.

Friends Who Fight Paper's Battle

The paper industry is so big, it often overlooks its best friends without meaning to. These include companies you may not know, but which are out doing a big job of selling paper.

For instance:

No other packaging material can compare with paper, particularly in the garment bag field. So says Lincoln Bag Co., Chicago, in a three page spread advertisement in a recent issue of the monthly publication, Cleaning and Laundry AGE.

The ad appeared on eve of an annual meeting of Illinois Cleaners and Dyers at which packaging was the keynote topic.

Lincoln's ad stressed that paper protects finish better, paper is easier to handle, paper prevents fading, paper costs less, paper prints better, paper cushions garments better, paper packaging is distinctive, additional services are sold on paper, printing is more attractive on paper, paper is not reusable.

Pretty valuable advertising for the whole paper industry in that three-page spread.

And in Chicago the other day, we heard of another important ally—fighting the battle for your paper industry.

The Industrial Bag and Cover Association is a group of fabricators of covers for lumber shipments. Did you know that a half dozen or so companies in this association were promoting the use of paper to package lumber? We frankly admit that we didn't, but now that we do, here's a cheer for them.

On the bi-ways and the highways, far away from the paper mills, there are lots of companies and organizations which are doing a very effective selling job of selling the use of paper. Some way or other, it seems that they ought to get credit and recognition for what they are doing from this industry.

How To Unload a Heavy Boat

An executive is one who solves problems. One such was the lobsterman who happened around when Leon Bard faced the problem of unloading a heavy boat from a trailer.

As John Gould reports, the lobsterman, after one quick look, said, "Why not back your trailer into the water and leave it there until the tide comes up. Then your boat will float off."—*Rice Barton's High Road.*

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stainless steels

mean to paper-making...

In headers, like the one below, or in digesters, valves, evaporators, screens – *everywhere* in the paper mill – ***stainless*** is right at home. Here are good reasons . . .

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Continuous cleanliness–The smooth, clean surface of stainless means freedom from buildup. And it protects paper from contamination or discoloration.

High strength–Stainless adds strength and rigidity to processing equipment. It's another reason why stainless equipment stays in service longer.

Abrasion resistance – With its tough, abrasion-resistant surface, stainless outlasts other metals scores of times in erosive or abrasive environments.

It all boils down to the vital fact that ***stainless*** means greater efficiency, higher profits, in paper-making. Can you afford *not* to use stainless? *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

Write now for your free copy of Crucible's helpful, 20-page booklet, "Making the Most of Stainless Steels in the Pulp and Paper Industry."

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